



CITY OF CARLISLE.

REPORT

ON THE

Sanitary Condition of the City of Carlisle

FOR THE YEAR 1921,

BY

JOSEPH BEARD,

F.R.C.S. (Edin.), M.R.C.S. (Eng.), L.R.C.P. (Lond.),
D.P.H. (Cantab.), F.R.S. (Edin.),
Of Gray's Inn, Barrister-at-Law.

Medical Officer of Health,
School Medical Officer,
Chief Tuberculosis Officer, &c.

CARLISLE:

CHAS. THURNAM & SONS, PRINTERS, ENGLISH STREET.

PUBLIC HEALTH STAFF

including all who are employed in work connected with the public health, whether under the Health, Maternity and Child Welfare, or the Education Committees:—

Medical Officer of Health, School Medical Officer, Chief Tuberculosis Officer, &c., &c.	JOSEPH BEARD, F.R.C.S., D.P.H., &c., &c.
Assistant Medical Officer of Health, Tuberculosis Officer, and Assistant School Medical Officer	ALLAN SEMPLE, M.B., Ch. B., D.P.H.
Assistant School Medical Officer, and Assistant Medical Officer (M. & C. W.)	Miss E. E. BOURNE, M.B., Ch.M., D.P.H.
Dental Surgeon (part-time)	WILLIAM TAYLOR, L.D.S.
Veterinary Inspector (part-time)	R. CRAIG ROBINSON, M.R.C.V.S.
Chief Sanitary Inspector, and Inspector under Sale of Food and Drugs Acts and Shops Acts	* C. W. HILL
Assistant Sanitary Inspectors	‡†* W. HANSON * E. S. BROADHEAD
Health Visitors	Misses H. M. HILL, S. EDWARDS, J. G. SMITH
Nurse in charge of School Clinic and Tuberculosis Dispensary	Miss M. E. GLOYNE
School Nurses	Misses J. M. TINNION, J. MACKENZIE, A. WILSON
Matron of Maternity Hospital	Miss A. H. HARRIS
Clerks	G. E. BARROW, R. F. THOBURN, Misses L. HIND, and M. PURDAM
Disinfector	H. PORTER
Superintendent of Public Slaughter-houses	J. DODDS
Public Analysts (part-time)	Messrs. HELLON & MANN, WHITE-HAVEN
Bacteriologists (part-time)	PUBLIC HEALTH LABORATORY, MANCHESTER CLINICAL RESEARCH ASSOCIATION, LONDON

* Sanitary Inspectors' Certificate, R.S.I.

† Sanitary Inspectors' Certificate, S.I.A.

‡ Meat Inspectors' Certificate, R.S.I.

The following Acts, Bye-laws, and Regulations are in force in the district, and were adopted on the dates mentioned:—

Bye-laws with respect to New Streets and Buildings under the Public Health Act, 1875	... ..	13th Oct., 1885
Regulations under the Contagious Diseases (Animals) Act, 1886, and the Dairies, Cowsheds. and Milkshops Order of 1885	... ..	16th July, 1889
The Infectious Diseases (Prevention) Act, 1890	... ..	10th March, 1891
The Public Health Acts (Amendment) Act, 1890	... ..	10th March, 1891
Bye-laws for regulating the Public Pleasure and Recreation Grounds, made in pursuance of the Public Health Act, 1875	... ..	14th Feb., 1893
Bye-laws with respect to Common Lodging-houses, made in pursuance of Section 80 of the Public Health Act, 1875	... ..	15th Aug., 1893
Bye-laws relating to the conveyance of carcases of dead animals through the streets	... ..	8th Jan., 1895
Bye-laws for regulating the Carlisle Public Slaughter-houses under the Public Health Act, 1875	... ..	12th May, 1896
Bye-laws made for regulating the carrying on of offensive trades, in pursuance of Section 113 of the Public Health Act, 1875	... ..	9th March, 1897
Baths and Wash-houses Acts	... ..	9th July, 1901

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH
COMMITTEE.

I have the honour to submit the following report on the health of the City during the year 1921. In July, Dr. Spence left the service of the Corporation to take up the appointment of Medical Officer of Health to the Borough of Eccles, Lancashire, and in consequence of the vacancy thus created not being filled the duties of the remaining members of the medical staff were re-organised. Dr. Semple then became responsible for the work of Clinical Tuberculosis Officer, some of his duties as Assistant School Medical Officer being taken over by Dr. Eleanor E. Bourne, in conjunction with her duties as Assistant Maternity and Child Welfare Medical Officer. The remaining duties I am now responsible for, as in the days when Dr. Spence and I were alone.

At the end of the past year the Ministry of Health issued a Circular in respect of the revision of the contents of Annual Reports of Medical Officers of Health. With a view to economy the Circular had for its object the curtailment of those portions of reports in which little variation from year to year is shown. Full and detailed reports will in future be required at intervals of not more than five years, but in other years, what is described as a simpler report, which shall be known as an ordinary report, will satisfy, and the Annual Reports for 1919 and 1920 will be treated by the Ministry as forming the first of the series of Survey Reports.

In compiling this report I have given consideration to the question of recording such particulars as may be required for future reference, but the report has been curtailed as far as practicable in accordance with the instructions contained in the Circular.

I am,

Mrs. Buchanan and Gentlemen,

Your obedient Servant,

JOSEPH BEARD,

Medical Officer of Health.

GENERAL STATISTICS.

Area (acres)	4,488
Population (1921)	53,200
Number of Inhabited Houses (1921)	12,017
Number of Families or Separate Occupiers (1921)	Figure not available
Rateable Value	£298,972
Sum represented by a Penny Rate	£953

EXTRACTS FROM VITAL STATISTICS OF THE YEAR.

Births—	Total.	M.	F.	
Legitimate ...	1,238	648	590	Birth Rate
Illegitimate ...	72	31	41	(R.G.) ... 24.6
Deaths ...	754	380	374	Death Rate
				(R.G.) ... 14.1
Number of women dying in, or in consequence of, childbirth—				
From Sepsis ...				2
From other causes ...				2
Deaths of Infants under one year of age per 1,000 births—				
Legitimate ...	104.0			
Illegitimate ...	111.0			
	— Total ...			105.3
Deaths from Measles (all ages) ...				None
„ Whooping Cough (all ages) ...				7
„ Diarrhœa (under 2 years of age) ...				11

POPULATION.

The present area of the City is 4,488 statute acres. The population, as shown by the preliminary figures relating to the census of 1921, was 52,600, made up of 24,419 males and 28,181 females.

The figure provided by the census of 1911, plus the population added by the extension of the City, was 52,225, comprising 24,354 males and 27,871 females.

The preponderance of females over males at the 1911 census was 3,517, whilst at the census of 1921 the figure was increased to 3,762. The total decennial increase was therefore shown to have been 375.

One of the direct legacies of the War throughout the country, shown by the census returns of 1921, is the increased preponderance of females over males, the excess amounting to 1,720,802, as compared with 1,179,276 in 1911.

This preponderance corresponds to a ratio of 1,095 females to 1,000 males, and this proportion of females is the highest ever recorded and stands out in strong contrast to any of the earlier records.

An estimate of the population made by me on June 30th, 1921, showed the figure to be 53,189, and I have since received the figure of the estimate of the Registrar-General for mid-year 1921, which is 53,200, and this figure has been used in making the calculations for this report.

BIRTHS.

The number of births registered in the City during the year was 1,310, a decrease of 115 on the figure for the previous year. The number of births per 1,000 of the population at all ages is 24.6, a decrease of 0.1 per 1,000 on the previous year's figure.

The birth-rate for the whole of England and Wales during 1921 was 22.4 per 1,000. The rate for the 96 great towns, to which classification Carlisle belongs, was 23.3 per 1,000, and for the 148 smaller towns of England and Wales 22.3 per 1,000.

Year.	Number of Births Registered.			Per 1,000 of the population.
	Males.	Females.	Total.	
1917	531	586	1117	18.8
1918	524	509	1033	17.1
1919	557	509	1066	18.5
1920	759	666	1425	24.7
1921	679	631	1310	24.6

679 of the children born were males and 631 females, the proportion of males to females being 1,076 to 1,000.

The births and deaths registered during the year have been allocated to the various wards of the City, but as there is at present no reliable information as to the population of the various wards it is not possible to give the birth and death-rates for the various wards separately.

**Table showing details of the Births in the several Wards,
1921.**

QUARTER ENDING.	STANWIX AND ETTERBY.	RICKERGATE.	AGLIONBY.	GREYSTONE.	ST. NICHOLAS.	CURROCK.	DENTON HOLME.	ST. CUTHBERT'S.	CALDEWEGATE.	NEWTOWN AND BELLE VUE.	TOTALS FOR CITY.
March 31	12	21	20	27	34	38	46	42	42	18	300
June 30.....	14	40	26	40	41	31	62	33	58	24	369
September 30 ..	7	34	30	25	41	27	52	42	43	27	328
December 31.....	9	31	33	34	22	33	49	43	40	19	313
Totals... ..	42	126	109	126	138	129	209	160	183	88	1310

ILLEGITIMATE BIRTHS.

The number of illegitimate births registered during 1921 was 72, or 54.9 per 1,000 of the total births. This shows a decrease of 12 upon the figure for 1920.

In 10 instances, or 13.9 per cent. of the total illegitimate births for the year, the mother was not a resident of the City.

The distribution of the illegitimate births among the several wards was as follows:—

	Stanwix and Etterby	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	S. Cuthbert's	Caldewgate	Newtown & Belle Vue	Totals for City
Males	...	4	4	4	3	2	2	6	3	3	31
Females	3	7	5	2	4	3	6	4	6	1	41
Totals	3	11	9	6	7	5	8	10	9	4	72

DEATHS.

The total number of deaths registered during 1921 was 818, as compared with 785 in 1920. 21 deaths occurred of persons belonging to the City in institutions and other places outside, while the deaths of 85 persons not belonging to the City occurred in public institutions and other places within the City. Excluding the latter figure, and adding the 21 deaths of Carlisle residents which occurred in other districts, a nett figure of 754 remains, or equal to a nett death-rate of 14.1 per 1,000.

The death-rate for the whole of England and Wales during 1921 was 12.1 per 1,000. The rate for the 96 great towns, to which classification Carlisle belongs, was 12.3 per 1,000, and for the 148 smaller towns of England and Wales 11.3 per 1,000.

Table showing details of the corrected Deaths in the several Wards, 1921.

Quarter Ending	Stanwix and Etterby	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	S. Cuthbert's	Caldewgate	Newtown & Belle Vue	Totals for City
March 31	8	23	27	20	27	16	28	24	29	14	216
June 30	3	15	22	28	22	12	34	17	20	8	181
September 30	12	21	15	17	10	11	25	17	34	7	169
December 31	9	20	25	24	20	17	25	17	21	10	188
Totals	32	79	89	89	79	56	112	75	104	39	754

Table showing the number of Deaths at all Ages and at several Age periods.

	All Ages.	Under 1 Year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards.
No. of Deaths at all ages and at several age periods	754	138	41	27	27	251	270

The following table shows the diseases causing the largest number of Deaths during 1921, and a comparison with those of 1920, &c.:—

DISEASE.	1920.	1921.	Increase or Decrease	Average No. of Deaths for past 10 yrs.
Pulmonary Tuberculosis & Phthisis	36	46	+ 10	59
Other forms of Tuberculosis ...	15	22	+ 7	22
Pneumonia	53	45	— 8	58
Other Diseases of Respiratory System	66	60	— 6	54
Measles	4	...	— 4	11
Influenza	28	18	—10	20
Whooping Cough	10	7	— 3	11
Diphtheria, Membranous Croup ...	2	8	+ 6	9
Disease of Heart and Blood Vessels	149	191	+ 42	164
Rheumatic Fever, Chronic Rheumatism, Rheumatoid Arthritis ..	5	4	— 1	5
Cancer and Malignant Disease ...	62	53	— 9	62
Diseases of Digestive System other than Diarrhoea and Enteritis ...	29	15	—14	26
Diseases of Urinary System ...	33	35	+ 2	29
Diseases of Nervous System ...	24	45	+ 21	38
Prematurity and Injury at Birth, &c.	39	32	— 7	30
Accidents due to Negligence ..	18	12	— 6	23
Diarrhoea and Enteritis ...	19	37	+ 18	26

+ Shows an increase in the number of deaths.

— Shows a decrease in the number of deaths.

**The following table sets out the Cause and the Ages
at Death of 754 persons belonging to the City:—**

CAUSES OF DEATH.		NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESI- DENTS" IN INSTITUTIONS IN THE DISTRICT.
		All Ages.	Under 1 year.	1 and under 2.	2 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and up- wards	
1		2	3	4	5	6	7	8	9	10	11
All Causes	{ Certified ... Uncertified ...	734 20	134 4	22 1	18 ..	25 2	27 ...	79 1	168 3	261 9	241 ...
Enteric Fever	...	...	..	...	...	...	...	...	..	...	...
Smallpox	...	...	..	...	...	...	...	...	...	...	...
Measles	...	...	..	...	...	...	...	...	...	...	...
Scarlet Fever	...	1	...	...	..	1	...	...	...	...	1
Whooping Cough	...	7	3	4	...	...	...	...	...	...	...
Diphtheria and Croup	...	8	1	...	4	3	...	...	...	...	5
Influenza	...	18	2	...	1	...	..	3	4	8	...
Erysipelas	...	1	...	...	...	...	...	...	1	...	...
Phthisis (Pulmonary Tuberculosis)	...	46	2	...	...	3	5	19	16	1	9
Tuberculous Meningitis	...	7	2	1	1	3	...	...	...	...	3
Other Tuberculous Diseases	...	15	4	1	...	3	5	1	...	1	11
Cancer, Malignant Disease	...	53	...	...	...	...	1	4	25	23	30
Rheumatic Fever	...	3	...	...	1	...	...	2	...	...	...
Meningitis	...	11	5	1	1	...	2	2	...	...	3
Organic Heart Disease	...	101	2	...	2	1	...	2	32	62	9
Bronchitis	...	51	1	2	...	...	...	2	15	31	5
Pneumonia (all forms)	...	45	17	4	1	1	3	6	4	9	13
Other Diseases of Respiratory Organs	...	9	2	...	...	1	...	2	2	2	4
Diarrhoea and Enteritis	...	37	28	2	1	2	...	...	2	2	5
Appendicitis and Typhlitis	...	5	...	1	...	2	...	1	1	...	10
Cirrhosis of Liver	...	5	...	...	...	...	...	1	3	1	3
Alcoholism	...	...	...	...	...	...	...	...	...	...	...
Nephritis and Bright's Disease	...	26	...	...	...	...	1	6	8	11	2
Puerperal Fever	...	2	...	...	...	...	...	2	...	...	1
Other Accidents and Diseases of Preg- nancy and Parturition	...	2	...	...	...	...	...	2	...	...	1
Congenital Debility & Malformation, including Premature Birth	...	56	53	2	1	...	...	..	...	...	15
Violent Deaths, excluding Suicide	...	12	...	1	1	1	1	2	4	2	18
Suicide	...	2	...	...	...	...	...	1	1	...	...
Other Defined Diseases	...	230	16	4	4	6	9	22	53	116	93
Diseases ill-defined or unknown	...	1	..	...	..	...	...	..	...	1	...
Totals	...	754	138	23	18	27	27	80	171	270	241
Sub- Entries included in above figures	Cerebro-spinal Meningitis Poliomyelitis Typhus Fever Lobar Pneumonia Pneumonia not defined	... ... ... 4 19	... ... ... 1 1	... ... ... 1 1	... ... ... ... 1	... ... ... ... 1	... ... ... 1 2	... ... ... 1 4	... ... ... ... 3	... ... ... ... 6	... ... ... 1 6

The following table shows the Vital Statistics for the whole City during 1921 and previous years:—

YEAR.	Population estimated to Middle of each Year	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncorrected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 Year of age		AT ALL AGES.	
			Number.	Rate.					Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1913	52,497	1164	1164	22.1	821	15.6	76	24	148	127.1	769	14.6
1914	52,530	1209	1209	23.0	848	16.1	69	22	148	122.4	801	15.2
†1915 {	52,625	1192	1192	22.6	994	18.8	72	31	172	144.3	953	18.1
	50,036											
†1916 {	49,721	1103	1103	20.3	850	17.0	93	24	112	101.3	781	15.7
	54,097											
†1917 {	59,151	1117	1120	18.9	826	15.5	101	46	119	106.5	771	14.5
	53,064											
†1918 {	60,188	1033	1037	17.2	921	17.1	120	49	131	126.8	850	15.8
	53,717											
†1919 {	57,500	1066	1078	18.7	778	14.1	112	54	115	107.9	720	13.6
	55,198											
†1920 {	57,697	1425	1417	24.7	785	13.7	117	37	114	80.0	705	12.3
	57,397											
†1921	53,200	1310	1298	24.6	818	15.3	85	21	138	105.3	754	14.1

† Registrar-General's estimates of population.

The following public and other Institutions are within the City:—

The Union Workhouse and its Infirmary.
The Cumberland Infirmary.
Carlisle Non-Provident Dispensary.
The Crozier Lodge Isolation Hospital.
Strathclyde House (Home for Incurables).
St. Joseph's Home (aged and infirm persons).
Chadwick Memorial Industrial School.
Corporation Dispensary and School Clinic.
Corporation Maternity Hospital and Clinics.

Birth-rate, Death-rate, and Infantile Mortality in Carlisle since 1891.

Year.	No. of Births.	Birth-rate.	No. of Deaths.	Gross Death-rate.	Infantile Mortality.	Average Five Years.		
						Birth-rate.	Death-rate.	Infant Mortality.
1891	1207	30.8	789	20.1	137	31.8	20.1	142.6
1892	1213	30.5	805	20.2	123			
1893	1389	34.5	868	21.6	178			
1894	1315	32.0	780	19.2	133			
1895	1311	31.4	794	19.4	142			
1896	1246	29.6	753	18.2	137	29.9	19.5	146.6
1897	1324	30.8	811	19.4	134			
1898	1311	30.0	935	22.2	183			
1899	1300	29.4	818	19.2	145			
1900	1354	30.1	807	18.8	134			
1901	1246	27.3	810	17.8	129	26.7	17.9	131.0
1902	1245	27.0	856	18.5	117			
1903	1322	28.4	813	17.4	113			
1904	1278	26.7	933	19.7	152			
1905	1168	24.3	783	16.3	139			
1906	1227	25.3	811	16.7	132	23.6	15.1	127.5
1907	1178	23.8	848	17.1	143			
1908	1223	24.4	713	14.2	129			
1909	1149	22.6	735	14.5	123.6			
1910	1145	22.2	683	13.2	110.0			
1911	1109	23.8	776	16.7	145.0	23.2	17.1	128.2
1912	1142	24.6	813	17.5	102.4			
1913	1164	22.1	821	15.6	127.1			
1914	1209	23.0	848	16.1	122.4			
1915	1192	22.6	1027	19.5	144.3			
1916	1103	20.3	850	17.0	101.5	19.9	15.5	104.5
1917	1117	18.8	826	15.5	106.5			
1918	1033	17.1	921	17.1	126.8			
1919	1066	18.5	778	14.1	107.9			
1920	1425	24.7	785	13.7	80			
1921	1310	24.6	818	15.3	105.3	20.7	15.1	105.3

The following figures relate to the death of persons not normally resident in the district which occurred within the City:—

Cumberland Infirmary	...	...	58
Private Nursing Homes	...	...	17
Private Houses	...	...	9
Fusehill Hospital	...	...	1
			—
			85
			—

INQUESTS.

During the year the City Coroner held 37 inquests. Of this number, 25 related to deaths of persons who had resided within the City, and 12 to persons who resided in other districts, but who died within the City. 3 related to children under five years of age, and in 1 instance the infant was under one year.

MORTUARY.

During 1921, 12 bodies were removed to the Public Mortuary, a post-mortem examination being performed in each instance.

UNCERTIFIED DEATHS.

During the year 20 deaths were registered of persons belonging to the City in which no certificate was given by a medical man, and in which no inquest was held.

During 1920, 18 such deaths were registered.

CANCER.

The following figures include all deaths from causes coming within the general term cancer. The number of deaths registered during 1921 was 53, and, with the exception of the year 1919, this figure is the lowest since 1911.

Calculated upon the population at all ages a mortality rate of 0.99 per 1,000 is obtained.

Table of Deaths from Cancer, 1912 to 1921.

Age.	Numbers.									
	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
1 to 5 years ...	...	1	..	...	...	...	...	...	...	...
5 to 15 years ...	...	1	...	...	...	...	1	...	1	...
15 to 25 years ...	3	...	...	1	1	1	1	...	...	1
25 to 35 years ...	2	1	2	...	2	1	1	2	1	2
35 to 45 years ...	6	5	10	3	6	7	5	...	5	2
45 to 55 years ...	18	11	10	7	17	10	13	9	15	5
55 to 65 years ...	18	25	20	21	21	32	21	19	12	20
65 to 75 years ...	10	14	16	20	18	14	17	15	17	19
75 & upwards ...	5	5	10	6	9	8	7	4	11	4
Totals ...	62	63	68	58	74	73	66	49	62	53

RAINFALL.

Observations taken at the Carlisle Cemetery by J. T. Charlton, Esq.

MONTHS.	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921.		Average for 10 years 1911-1920.
											Rainfall. days on which Rain fell.	in.	
January	1.04	1.45	2.17	2.64	3.17	3.55	1.53	3.13	2.88	4.17	in.	5.01	25.73
February	3.62	1.39	1.27	2.59	3.56	3.31	1.13	2.86	1.65	2.61	6	0.16	23.39
March	1.33	3.81	3.37	2.67	1.88	2.14	1.98	0.66	2.35	3.11	26	3.71	23.30
April	2.75	0.42	2.77	1.36	1.91	2.44	2.45	0.50	1.49	2.17	14	0.86	18.26
May	2.32	1.81	1.78	1.73	2.04	2.98	1.91	1.88	1.10	3.48	17	1.28	21.03
June	3.79	4.13	2.40	1.06	1.15	3.30	2.01	0.87	2.66	2.11	10	0.65	23.48
July	0.69	1.83	1.12	3.04	3.80	4.61	1.31	3.73	0.87	4.26	16	2.44	25.26
August	2.20	4.47	2.17	2.73	3.27	2.39	5.64	3.21	2.96	2.50	22	5.39	31.54
September	2.16	2.22	2.11	1.28	1.03	2.06	2.61	7.36	1.81	1.89	11	2.15	24.53
October	2.23	2.10	2.51	1.11	1.25	5.10	4.33	4.00	2.36	1.00	15	2.56	25.99
November	3.34	2.65	3.40	4.52	0.58	4.34	2.83	2.01	2.35	2.02	14	1.68	28.05
December	4.73	3.73	2.46	3.58	4.64	2.75	1.40	3.44	3.32	2.79	25	3.94	32.84
Totals	30.20	30.01	27.53	28.31	28.28	38.97	29.13	33.65	25.21	32.11	205	29.83	30.34
Total number of days on which Rain fell	181	217	194	201	183	228	176	190	191	211	...	...	197

Observations by W. Egglestone, Esq., upon the rainfall at Denton Holme Allotment Gardens, taken weekly with a gauge of 5 inches 2 feet above the ground level, and 57 feet above sea level, show that during the year 24.43 inches of rain fell, giving a weekly average of 0.47 inches. There were two weeks without rainfall, one in July and one in November. The driest month of the year was February, with a rainfall of 0.55 inch, the wettest being September, with a rainfall of 3.50 inches.

Evaporation gauged from an open vessel 2 feet above the ground level during the year was 32.64 inches, the greatest evaporation taking place during the month of July, viz., 7.44 inches; the lowest during the month of January, viz., 0.32 inches. The weekly average evaporation was 0.62 inches.

WATER SUPPLY.

The chemical and bacteriological results of quarterly samples are as follows:—

Reports on Samples of Water from Domestic Taps.

*Bacteriological Examination made at Public Health Laboratory,
Manchester.*

QUANTITATIVE ANALYSIS		1921.							
A. Aerobic micro-organism growing for 3 days in nutrient gelatine at 20° C. to 21° C.		Number of colonies in one gramme of water.				No. of kinds clearly recognisable.			
		MAR.	JUNE.	SEPT.	DEC.	MAR.	JUNE.	SEPT.	DEC.
Non-Liquefying Bacteria	...	6	20	4	6	1	2	2	2
Liquefying Bacteria	...	0	5	1	1	0	2	1	1
Other Micro-Organisms	...	0	0	0	0	...	...	...	...
B. Anærobic Micro-Organisms		...	...	...	...	...	...	...	...

QUALITATIVE ANALYSIS.		1921.			
		MARCH.	JUNE.	SEPT.	DEC.
A. Bacteria associated with sewage or fæcal pollution	B. Coli communis found in 100 C.C. but not in 15 C.C.				
B. Bacteria associated with disease	Not found.				

During the year a sample of water taken from a deep well at Fusehill Institution was examined.

CHEMICAL ANALYSIS BY Messrs. HELLON & MANN,
WHITEHAVEN.

Results shown in grains
per gallon.

1921

CHEMICAL.	MARCH.	JUNE.	SEPT.	DEC.
Total Solid Matter in solution dried at 212° Fahr.	7.560	9.240	8.960	9.240
Chlorine existing as Chlorides ... ..	.560	.490	.525	.490
Ammonia	traces	traces	traces	traces
Albuminoid Ammonia	.002	.003	.002	.003
Nitrogen existing as Nitrates	traces	traces	traces	traces
Oxygen absorbed in 15 minutes at 80° Fahr.	.039	.016	.074	.057
Oxygen absorbed in 4 hours at 80° Fahr. ...	.086	.038	.099	.109
Lead & other Poisonous Metals	None	None	None	None
Hardness before boiling	6 $\frac{1}{4}$ °	6 $\frac{1}{2}$ °	6°	6 $\frac{1}{4}$ °
Hardness after boiling	1°	$\frac{1}{2}$	$\frac{3}{4}$ °	$\frac{3}{4}$ °
Appearance in two-foot tube	Clear greenish-yellow	Clear greenish-blue	Clear yellowish-green	Clear yellowish-green
Smell when heated to 100° Fahr.	None	None	None	None
Microscopical Examination	Slight deposit of Vegetable debris	Slight deposit of Vegetable debris	Slight deposit of Vegetable debris	Slight deposit of Vegetable debris and mineral particles

A determination of the plumbo-solvent action of the water was made according to the method of the Local Government Board in all samples taken during the year, and the results were satisfactory.

The Lacmoid re-action in all instances was Alkaline

During the year samples of water from the following places were examined:—Linstock Beck, River Eden (near intake at old Filter Beds), Stoneyholme, and also one from the old Filter Beds.

Total annual distribution of Water from Cumwhinton covered reservoir during the years 1914 to 1921.

Year.	Number of Gallons.	No. of Gallons per head, per day.
1914	690,410,000	33.34
1915	710,974,000	34.03
1916	758,483,000	35.80
1917	801,490,000	33.78
1918	795,220,000	34.58
1919	804,040,000	34.88
1920	814,170,000	35.41
1921	771,250,000	33.54

FOOD.

Milk Supply.

There are 25 registered cow-keepers in the City, who have 42 cowsheds, in which an average of 330 cows were kept during the year, and 12 registered milk sellers.

All the cowsheds and dairies in the City are regularly inspected by the Sanitary Inspectors, who paid 190 visits for this purpose during the year.

8 samples were taken of milk being brought into the City from outside dairies, and were submitted for bacteriological examination for the presence of tubercle bacilli, but no bacilli were found in any of the samples.

42 samples of milk were taken for chemical analysis during the year, all of which were found to comply with the standard laid down by the Regulations.

**PUBLIC HEALTH (MILK AND CREAM)
REGULATIONS, 1912 AND 1917.**

As all the milk retailed in the City is sold within 12-24 hours of production, dealers are not tempted to add preservatives to it. 42 samples of milk were examined for the presence of preservatives, but in no instance was any preservative found.

1. Milk and Cream not sold as preserved cream—

				Number of Samples examined for the presence of a preservative.	Number in which preservatives were reported to be present.
Milk	...	...	...	42	Nil
Cream	...	...	...	Nil	Nil

2. Cream sold as Preserved Cream—

(a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct—

(i) Correct statements made	...	...	2
(ii) Statements not made	...	...	2
			—
Total	...		4
			—

(b) Determinations made of milk fat in cream sold as preserved cream—

(i) Above 35 per cent.	...	...	4
(ii) Below 35 per cent.	...	...	Nil
			—
Total	...		4
			—

(c) Instances where (apart from analysis) the requirements as to labelling or declaration of preserved cream in Article V (1) and the proviso in Article V (2) of the Regulations have not been observed 1

(d) Particulars of each case in which the Regulations have not been complied with, and action taken.

In 2 instances the cream was sold without a label being affixed, and 1 of these 2 samples was certified to contain .15 per cent. boric acid in excess of the limit. The vendor was prosecuted on both counts and fined 21s. and costs.

Meat.

There are 3 licensed private slaughter-houses in the City, 2 of which are owned by Railway Companies and are used during certain periods of the year for the slaughter of lambs for sale at Smithfield Market, London. The other slaughter-house is licensed only for the slaughter of pigs.

All other animals slaughtered within the City are killed at the Corporation Abattoir, which has been open since 1893. All carcasses are inspected by the Slaughter-house Superintendent during slaughtering, and any carcass which is not entirely satisfactory is detained for further examination. Practically all carcasses or parts of carcasses which are considered unfit for consumption are surrendered voluntarily for destruction.

Casualty carcasses sent from the surrounding districts to the public abattoir with a view to sale for human consumption are inspected before permission is given for them to be offered for sale in the City.

The following Table gives particulars of Animals killed, Carcasses examined, and particulars of Carcasses unfit for human food.

Animal	Total number of animals slaughtered and examined	Number of carcasses specially referred for examination	Number in which the whole carcass was unfit for human food	Number in which a portion of a carcass was unfit for human food	Number affected with Tuberculosis.	
					Whole carcass condemned	Part of carcass condemned
Oxen	3,135	99	58	32	34	17
Sheep	15,566	41	34	3	...	...
Calves	545	14	14	...	4	...
Pigs	3,625	1	1	...	1	...
<i>Imported</i> Oxen	...	4	...	4	...	...
Sheep	...	...	...	...	...	...
Totals	22,871	159	107	39	39	17

Other Foods.

Information concerning unsound food, food inspection, bakehouses, &c., and the work under the Sale of Food and Drugs Acts, is given on pages 70-72 and 74-75 of the Report of the Sanitary Inspector.

INFECTIOUS DISEASES.

During the year 408 notifications of infectious diseases were received, 142 of which related to various forms of tuberculosis, and 266 to other infectious diseases.

The number of deaths certified as due to the seven principal zymotic diseases was 19, equal to a zymotic death-rate of 0.35 per 1,000 of the population. In the previous year 20 deaths were certified as due to zymotic diseases.

Table showing the Age and Seasonal incidence of the various Infectious Diseases notified during 1921.

	Number of Cases Notified at various Ages.							Number of Cases notified in each Ward.										Total number of cases notified	Number of cases in- correctly notified	Nett number of cases notified	Number of cases removed to hospital	
	Under 1 year	1—5 years	5—15 years	15—25 years	25—45 years	45—65 years	65 and up- wards	Stanwix and Enderby	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	St. Cuthbert's	Caldegate	Newtown & Belle Vue					
Scarlet Fever	1	10	61	5	2	2	...	4	10	4	17	10	5	7	6	6	10	79	2	77	57	57
Diphtheria ...	1	14	38	2	2	2	...	3	5	5	8	4	9	2	5	4	12	57	9	48	42	42
Enteric Fever	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	...	...	1
Puerperal Fever	...	...	...	...	3	4	...	...	2	1	...	4	1	2	1	...	1	3	...	...	...	...
Erysipelas ...	...	...	1	...	9	6	1	...	1	...	...	3	4	2	1	...	...	15	...	15	...	...
Malaria ...	...	...	...	1	2	1	...	...	1	...	2	...	1	2	1	...	...	10	...	10	...	...
Dysentery ...	...	...	...	...	6	5	...	...	6	...	...	...	...	...	...	...	...	3	...	3	...	...
Acute Primary Pneumonia	4	6	6	11	6	5	1	3	6	...	6	5	4	6	3	6	2	39	...	39	39	8
Acute Influenzal Pneumonia	2	12	5	1	5	5	3	1	...	...	4	6	2	12	4	2	...	33	...	33	6	6
Encephalitis Lethargica	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...
Polio-myelitis	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...
Ophthalmia Neonatorum	24	...	...	...	...	...	...	...	2	1	...	2	2	4	5	7	1	24	...	24	...	...
Pulmonary Tuberculosis	2	1	24	22	34	20	3	2	13	16	12	7	12	12	9	15	8	106	...	106	106	...
Other forms of Tuberculosis	2	4	19	6	3	2	...	2	1	2	6	2	3	7	4	5	4	36	...	36	36	...

SCARLET FEVER.

During the year 79 cases of scarlet fever were notified, an increase of 9 on the number notified during the previous year, the incidence of the disease being slightly higher during the later part of the year. The cases occurred in all parts of the City, and there was no evidence of localised spread of infection.

2 children were notified as suffering from diphtheria, but the diagnosis in each case was later amended to scarlet fever.

57 of the patients, or 72 per cent., were removed to the Isolation Hospital.

During the year 1 death only of a resident was registered as being due to scarlet fever.

4 cases occurred at the Cumberland Infirmary, 1 of whom was a nurse, and another a patient who did not reside in the City; the remaining 2 cases were City residents.

No return case occurred.

Table showing notifications, cases isolated, and number of deaths from scarlet fever during the years 1917-1921:—

Year.	No. of cases notified.	No. of cases isolated in Hospital.	Average period in Hospital (days).	No. of return cases.	No. of deaths.	Deaths per 100 cases.
1917	30	19	43.0	0	0	0.0
1918	38	30	39.8	0	0	0.0
1919	41	25	34.3	0	2	4.9
1920	70	47	42.8	1	0	0.0
1921	79	57	43.5	0	1	1.2

DIPHTHERIA.

The number of cases of diphtheria notified was 57, compared with 35 in 1920. 9 of the cases notified were subsequently found not to be suffering from diphtheria.

During the year 8 deaths of residents were registered as being due to diphtheria, the death-rate being 0.15 per 1,000 of the estimated population.

42, or 73 per cent. of the cases notified, were removed to the Isolation Hospital.

No return case occurred.

Table showing number of notifications, number of cases isolated, number and percentage of deaths, 1917—1921.

Year.	No. of cases notified.	No. of cases isolated in Hospital.	No. of deaths.	Deaths per 100 cases.
1917	98	81	12	12.2
1918	62	51	6	9.6
1919	51	34	5	9.8
1920	35	20	2	5.7
1921	57	42	8	14.

ANTI-DIPHTHERIA SERUM.

19 applications were made by medical practitioners for the free supply of anti-diphtheria serum, 120,000 units being supplied.

Table showing case mortality of Scarlet Fever and Diphtheria isolated in Hospital compared with Home Cases.

Year.	SCARLET FEVER.				DIPHTHERIA.			
	Hospital Cases.		Home Cases.		Hospital Cases.		Home Cases.	
	No. of Cases Isolated.	Death-rate per 100	No. of Cases Isolated.	Death-rate per 100	No. of Cases Isolated.	Death-rate per 100	No. of Cases Isolated.	Death-rate per 100
1917	19	0.0	11	0.0	81	11.1	17	17.6
1918	30	0.0	8	0.0	51	6.0	11	18.2
1919	25	8.0	16	0.0	34	11.7	17	5.9
1920	47	0.0	20	0.0	20	5.0	10	10.0
1921	57	1.2	22	0.0	42	11.9	15	20.0

SMALLPOX.

The district was free from smallpox during the year.

2 notifications were received from Port Sanitary Authorities that certain persons who had been in contact with smallpox were proceeding to Carlisle. All the persons referred to in the notices were visited and kept under observation. No occurrence however of the disease in these persons took place.

ENTERIC FEVER.

1 notification was received of a woman suffering from enteric fever.

The patient was removed to the Isolation Hospital, and her condition was found to be due to pyorrhœa alveolaris. The patient was discharged and recommended to obtain dental treatment, which she did, and her illness subsided.

Table showing the average number of cases notified as enteric fever for 5-year periods, 1890-1919, and for the 2 years 1920-1921:—

Years.	Average for periods of 5 years.	Year.	Number of cases notified.
1890-1894	21·2	1920	2
1895-1899	18·6	1921	1
1900-1904	12·6	...	...
1905-1909	3·2	...	...
1910-1914	3·8	...	...
1915-1919	1·4	...	...

No case of typhus or continued fever was notified.

MALARIA.

10 notifications relating to patients suffering from malaria were received. In each instance the patient had been on active service in the Balkans, Egypt, or Mesopotamia, and had there been infected with the disease. No case of malaria of indigenous origin was notified.

DYSENTERY.

3 persons were notified as suffering from dysentery. In 2 cases the patients had suffered from dysentery while on active service in the near East, and were suffering from a relapse of the condition at the time of notification. In the third case the patient was a missionary, who had just returned to this country from India. The cases were kept under observation, and precautions against spread of infection were taken. No extension of the disease occurred.

PNEUMONIA.

72 notifications of cases of pneumonia were received during the year. In 33 instances the disease was stated to be of the acute influenzal type, and in 39 instances of the acute primary type.

All the cases were visited and investigated by the Health Visitors, and, where not removed to Hospital, isolation carried out as far as possible, and advice as to the nursing and prevention of the spread of infection given.

178 visits were made by the Health Visitors in this connection; 14 patients were removed to Hospital.

In 6 instances the individual notified as suffering from acute influenzal pneumonia died, while in 7 instances the individual notified as suffering from acute primary pneumonia died.

INFLUENZA.

18 deaths were certified as due to influenza of persons resident in the City. The age distribution of the deaths occurring among the 18 persons was as follows:—

0 to 1	1 to 2	2 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and up- wards	Total
2	...	1	...	..	1	2	2	2	5	1	2	18

INFLUENZA VACCINE.

No application was received during the year for a supply of influenza vaccine.

ENCEPHALITIS LETHARGICA.

1 case of encephalitis lethargica was notified. On receipt of the notification I visited the home of the child, but found that he had died the previous day.

Particulars, which were sent to the Ministry of Health, were briefly as follows:—

T.F., aged 17 months, became feverish on the 9th and 10th May. Recovered and was taken to a village on the sea coast for a holiday. Became ill again about the 19th May, was seen by a doctor, and brought back home to Carlisle on the 24th May. The following signs were observed by one of the doctors in attendance:—

Child constipated and sleeping practically continuously, only waking for a few minutes at a time, when it appeared irritable and gave a peculiar cry. Temporary convergent squint of the right eye, with ptosis of both eyelids. Pupils showed practically no reaction to light. Slight retraction of the head. Temperature 102 degrees. Kernig's sign present. Difficulty was experienced in getting child to take food.

There was no illness amongst other members of the household, and the child had previously not been in contact with any person suffering from any illness. The sanitary condition of the house was good, and there was no overcrowding.

No blood tests or bacteriological examination were made, nor was a post-mortem examination made.

TETANUS, &c.

No case of tetanus was notified during the year.

3 applications for supplies of tetanus antitoxin were received from medical practitioners in the City, and 11 doses were supplied.

No case of cerebro-spinal fever or acute encephalitis was notified during the year.

Puerperal Fever, ophthalmia neonatorum, measles, whooping cough, chickenpox, and mumps, see pages 58 to 60.

NOTIFICATION FEES.

The total amount paid in fees for notifications of all notifiable diseases during 1921 was £38 19s. 6d. In September last the fee for notification was raised from 1s. to the original fee of 2s. 6d. per case.

SUMMARY OF NURSING ARRANGEMENTS, HOSPITALS, AND OTHER INSTITUTIONS, AVAILABLE FOR THE DISTRICT.

Professional Nursing in the Home.

(a) *General.* None.

(b) *Infectious.* An annual retaining fee of £20 is paid by the Council to the Queen's Nurses of the Carlisle District Nursing Association, on condition that nursing facilities will be made available by them for such cases of puerperal fever, ophthalmia neonatorum, measles, whooping cough, and epidemic diarrhoea, as the Council may require them to attend. In addition, 1s. per visit is paid on account of such cases.

Midwives.

The Corporation does not employ midwives except at the Maternity Hospital, and does not pay any subsidy in respect of any midwife practising in the district.

Hospitals provided or subsidised by the Local Authority.

(1) *Tuberculosis.* The Corporation has a call upon 20 beds in the Blencathra Sanatorium, Threlkeld, Cumberland, in accordance with the agreement made between the Local Government Board, the Sanatorium Committee, and the Corporation.

(2) *Maternity.* A hospital has been provided by the Corporation at 3 George Street, Carlisle, containing 7 beds and cots.

(3) *Children.* There is a children's ward at the Cumberland Infirmary which provides for local requirements. The Corporation make a general contribution to the funds.

(4) *Fever.* General infectious diseases are sent to Crozier Lodge Isolation Hospital, Carlisle, 50 beds.

(5) *Smallpox.* The Corporation has provided a hospital for the isolation of smallpox a few miles out of the City, containing 12 beds.

(6) *Others.* None.

LIST OF EXISTING CLINICS AND INFANT WELFARE CENTRES IN THE CITY.

Nature of Centre.	Address.	Accommodation.	Provided by.
Maternity and Child Welfare (Post-natal), once weekly	Maternity Hospital, 3 George Street	Waiting, Consulting, and Weighing Rooms	Carlisle Corporation
Maternity and Child Welfare (Ante-natal), once weekly	Do.	Waiting, Consulting, and Dressing Rooms	Do.
Infant Welfare Centre, weekly	West Walls	One Large Room	The Carlisle Mothers' and Babies' Welcome Society
Do.	St. John's Hall, South Street	Two Rooms	Do.
Do.	Caldewgate	One Room	Do.
Do.	Mac Innes Hall, Stanwix	Two Rooms	Do.
School Clinic, Minor Ailments, daily	2 George Street	Three Rooms	Carlisle Corporation
Do.	Do.	Two Rooms	Do.
Do.	Do.	Two Rooms and Dark Room	Do.
Do.	Do.	Two Rooms	Do.
Tuberculosis Clinics, four times weekly	1 George Street	Four Rooms and Laboratory	Do.
Veneral Clinic, two sessions weekly and intermediate treatment	Cumberland Infirmary	Three Rooms	Jointly by Carlisle Corporation and the Cumberland County Council

Institutional Treatment for Unmarried Mothers, Illegitimate Infants, and Homeless Children.

With the exception of a small house provided by the Diocesan Association at 25 Myddleton Street, Carlisle, which makes provision for one or two expectant unmarried females temporarily, there is no institution providing these facilities except those of the Poor Law Authority.

Ambulance Facilities.

(a) For infectious cases. An ambulance is kept at the Isolation Hospital for the use of cases occurring in the City and the adjacent Rural District.

(b) For non-infectious and accident cases. A public ambulance, provided by the Corporation, for accidents and illness other than Infectious Disease is kept at the Fire Station, Spring Gardens Lane. for which the following charges are made:—

For residents in the City	7/6 for each removal
For not exceeding 2 miles outside the City	10/- „
For beyond 2 miles and not exceeding 3 miles	12/6 „
For each additional mile thereafter (limited to 20 miles outside the City)	3/- per mile

Between 9 p.m. and 7 a.m. 50 per cent. additional is charged.

In cases of accidents in the streets no charge is made for the removal of persons to the Infirmary or their homes.

BACTERIOLOGICAL WORK.

The examination of sputum for the presence of tubercle bacilli was carried out by Dr. Spence until his departure for Eccles, and has since been carried out by Dr. Semple.

During the year 147 specimens have been examined, in 48 of which tubercle bacilli were found.

10 swabs from throats were sent to the Clinical Research Association for examination for the Klebs Loeffler Bacillus, in 2 of which the organism was found.

The following are notes by the Clinical Research Association relating to a sample of milk of unusual colour and consistency taken by the Veterinary Inspector in the course of one of his examinations:—“Has faint

peculiar smell. Centrifugalised deposit small in amount. Pus or blood not found. Merest trace of detritus noted. No marked unnatural souring from the presence of organisms which might cause bitter, slimy, or ropy milk, &c. Colostrum has a pungent taste and is curdled by heating; it does not entirely disappear from the milk until a period of about three weeks after parturition."

During the year 8 samples of milk were purchased for the purpose of bacteriological examination from carts of persons selling milk within the City, whose dairies are situated outside the City boundary. These were submitted for experimental inoculation to the Public Health Laboratory, Manchester, and were all found to be free from tubercle bacilli.

4 samples of City water, taken from a domestic tap, were also sent to the Public Health Laboratory, Manchester, for bacteriological examination. A tabulated summary of the reports is given on page 15.

A sample of water from a deep well at Fusehill Institution was also examined.

The following were also sent to the same Laboratory—
Blood film from a cow which had died suddenly.

Report: No anthrax bacilli found.

Tongue of a cow suffering from tumour of the jaw.

Report: Actinomycosis.

TUBERCULOSIS.

After the departure of Dr. Spence the arrangements for treatment and supervision of patients had to be modified, but the new arrangements, I think, ensure quite an efficient service in this respect.

Patients who attended the Wednesday and Friday morning clinics were transferred to the afternoon clinics. Dr. Semple has been responsible for the clinical work, and has devoted one half of his time to this branch of the Public Health service. The remainder of his time is devoted to school medical work, and more particularly in connection with the various school clinics, the examination of special cases and the open-air class. There is a very close co-operation between the various Corporation medical services. School children suffering from tuberculosis are seen at the Tuberculosis Dispensary, and each school nurse also has duties in connection with tuberculosis, consequently each has an intimate knowledge of the home conditions

and the medical and family history of the whole family, which is available for use in connection with both services. The open-air class at Newtown is particularly useful for the intensive observation of early or suspicious cases of tuberculosis, as well as for the after treatment of early cases on discharge from the sanatorium.

The Tuberculosis Officer also undertakes the selection of cases for treatment at the Silloth Institution in connection with the scheme of the Carlisle Council of Social Service. The Corporation have a first call upon 20 beds in Blencathra Sanatorium for the treatment of early and intermediate cases of tuberculosis in adults and children, ensuring adequate provision for the treatment of such cases, but there is unfortunately no provision for the institutional treatment of cases of advanced tuberculosis, and all that can be done for such persons is supervision and examination in their own homes, with a view to preventing as far as possible the spread of the disease to others. Cases of surgical tuberculosis are dealt with at the Cumberland Infirmary in respect of operative treatment, and of these such cases as are suitable are afterwards sent to Blencathra Sanatorium. The services of the Tuberculosis Officer are available for the assistance of medical practitioners, and cases referred by them are kept under observation at the Dispensary or examined and reported on. Sputum phials are issued to practitioners, and the sputum examined and reports as to the bacteriological examination are sent to them. The Tuberculosis Nurse and Tuberculosis Officer endeavour to impress upon parents and others the desirability of having all contacts, especially if exhibiting suspicious signs or symptoms, carefully examined, and, if necessary, kept under observation by the family doctor or alternatively at the Tuberculosis Dispensary. Tuberculin is not employed for diagnostic purposes, but carefully selected cases, principally school children and young adults, are treated with tuberculin, B.E., and the results obtained have been satisfactory.

Two cases of lupus were treated with X-ray and tuberculin combined, one being now apparently cured, while the other appears to be making satisfactory progress.

Facilities for free dental treatment to persons suffering from tuberculosis have so far not been provided by the Council, but the Tuberculosis Officer endeavours to get tuberculous patients to have dental treatment, and particularly before commencing sanatorium treatment.

Being in touch with voluntary associations the Tuberculosis Officer has been able to obtain assistance for patients in poor financial circumstances, and has also been able to give assistance in finding suitable employment.

The number of notifications of tuberculosis received during the year was 149, of which 7 were duplicates. Of the 142 primary notifications, 110 were by medical practitioners and 32 by the School Medical Officers. 106 notifications related to pulmonary tuberculosis and 36 to other forms of the disease.

Distribution of the Notifications of Tuberculosis in the various Wards of the City, 1921.

	Stanwix	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	St. Cuthbert's	Caldewgate	Newtown & Belle Vue	Carlisle
Pulmonary ...	2	13	16	12	7	12	12	9	15	8	106
Non-Pulmonary ...	2	1	2	6	2	3	7	4	5	4	36
Totals	4	14	18	18	9	15	19	13	20	12	142

The total number of deaths of residents registered from all forms of tuberculosis was 68, equal to a death-rate of 1.27 per 1,000 of the estimated population. Of this number, 46 (67.6 per cent.) were due to pulmonary tuberculosis, equal to a rate of 0.86 per 1,000 of the estimated population at all ages.

Distribution of the Deaths from Tuberculosis in the various Wards of the City, 1921.

	Stanwix	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	St. Cuthbert's	Caldewgate	Newtown & Belle Vue	Carlisle
Pulmonary ...	1	6	9	4	4	4	4	4	5	5	46
Non-Pulmonary ...	...	1	1	4	3	1	7	1	3	1	22
Totals	1	7	10	8	7	5	11	5	8	6	68

Summary of Notifications of Tuberculosis from 2nd January, 1921, to 31st December, 1921.

NOTIFICATIONS ON FORM A.

		Ages.	Number of Primary Notifications.												Total Prim-ary Noti-fications.	Total Noti-fications on Form A.
			65 & up-wards.													
			0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65 & up-wards.			
Pulmonary	Males	...	1	1	...	..	7	8	11	9	8	1	1	47	49
	Females	...	1	...	1	2	3	4	4	10	10	1	2	38	41	
Non-pulmonary	Males	...	1	3	2	3	4	1	...	2	1	1	...	18	18	
	Females	...	1	1	1	1	2	..	1	.	..	...	...	7	8
Totals		...	4	5	4	6	16	13	16	21	19	3	3	110	116	

NOTIFICATIONS ON FORM B.

		Ages.	Number of Primary Notifications.			Total Noti-fications on Form B.
			0-5	5-10	10-15	
Pulmonary	Males	...	...	8	3	11
	Females	...	...	5	5	10
Non-pulmonary	Males	...	...	5	2	7
	Females	...	...	1	3	4
Totals		...	...	19	13	32
						33

NOTIFICATIONS ON FORM C.

		Poor Law Institutions.	Sanatoria.	
Pulmonary	Males	...	29	2
	Females	..	17	1
Non-pulmonary	Males	...	...	...
	Females	...	1	...
Totals		...	47	3

Age and Sex distribution of Deaths from Tuberculosis, 1921.

Ages.	0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65 and over.	Totals
Pulmonary—												
Male ...	1	...	...	2	2	1	8	1	10	2	1	28
Female ...	1	...	1	..	1	1	4	6	4	...	...	18
Non-Pulmonary—												
Male ...	3	2	2	1	2	...	...	...	...	...	...	10
Female ..	3	1	...	3	2	1	1	..	...	..	1	12
Totals ...	8	3	3	6	7	3	13	7	14	2	2	68

The following table shows the period persons dying in 1921 survived after notification:—

	Not Notified	Died before Notification	Died within 7 days	Survived more than									
				1 week	1 month	3 months	6 months	9 months	1 year	1½ years	2 years	3 years	4 years
Pulmonary ...	7	2	4	33	29	26	20	17	17	15	11	9	6
Non-Pulmonary	13	1	3	5	4	3	3	3	3	3	2	1	1

Deaths from Tuberculosis, Influenza, and other Respiratory Diseases, 1917—1921.

Year.	Pulmonary Tuberculosis.	Non-Pulmonary Tuberculosis.	Tuberculosis, all forms.	Influenza.	Other Respiratory diseases.
1917	72	24	96	22	96
1918	48	19	67	107	133
1919	46	16	62	38	103
1920	36	15	51	28	119
1921	46	22	68	18	105

During the year 186 new patients attended the Tuberculosis Dispensary, 102 being notified cases and 84 contacts and suspects. Of the 102 notified cases, 35 were

insured persons, including 9 discharged soldiers, 44 were children of school age, and 23 others. In addition to these, 26 patients too ill to get to the Dispensary were examined at home.

84 of the patients newly notified were suffering from pulmonary tuberculosis, whose classification as to severity was as follows:—Stage I, 43; Stage II, 26; Stage III, 15.

228 old patients were also under supervision, 190 of whom had been notified, 38 being contacts and suspects. Out of the 190 notified patients, 79 were insured persons, including 35 discharged soldiers, 93 were children of school age, and 18 others.

The total number of cases attending at the Dispensary during the year was 414, of whom 292 were notified and 122 were contacts and suspects. The classification of all notified cases examined during the year was as follows:—Pulmonary, 254; Non-Pulmonary, 49 (comprising Glands, 26; Abdomen, 9; Bones and Joints, 10; other forms, 4).

The total number of clinics held in 1921 was 206. 1,978 visits were made by patients to the Dispensary for examination and supervision, and 113 visits were made by the Tuberculosis Officer to the homes of patients unable to attend. The average number of patients per clinic was 10. 4,665 visits were made by the nurses for the purpose of advising upon and supervising the home life of the patients. The revision of the tuberculosis register (which must be carried out quarterly) contained 971 names as at 31st December.

35 thermometers and 7 sputum cups and pocket flasks were given to patients. Cod Liver Oil and Extract of Malt were provided free of charge in 3 instances.

46 patients were treated with tuberculin B.E., a total of 559 injections being given, and in all cases a general improvement of the condition while under treatment was observed.

147 specimens of sputum were examined, and in 48 of these Tubercle Bacilli were found.

19 patients were receiving treatment in Blencathra Sanatorium at the commencement of the year, and 47 were admitted during the year, making a total of 66

patients who received sanatorium treatment. As this number includes 2 patients admitted on 2 occasions each, the nett number of patients receiving sanatorium treatment was 64. 47 patients were discharged, including 2 who were each discharged a second time, and 19 remained under treatment at 31st December. The condition of the patients on discharge from the sanatorium was reported to be as follows:—Much Improved, 25; Improved, 16*, Unchanged, 6* ; (*including the patients discharged twice). The total number of days spent in the sanatorium by the discharged patients was 5,660, equal to an average duration of residence of 120.4 days per patient.

TREATMENT OF TUBERCULOUS DISCHARGED SOLDIERS AND SAILORS.

The Tuberculosis Officer also carries out duties as Medical Referee to the local War Pensions Committee and the Ministry of Pensions Medical Board, and in this capacity has examined and reported upon all pensioners referred to him, and has also treated and supervised all pensioners suffering from tuberculosis.

During the year 44 discharged soldiers and sailors have attended the Dispensary, 9 of whom were new cases and 35 old cases. The homes of these pensioners have been frequently visited by the Tuberculosis Nurses and the men kept under supervision.

4 tuberculous pensioners were receiving treatment in the sanatorium on 1st January, and 10 were admitted during the year, 8 were discharged, and 6 were still under treatment on 31st December. The condition of the pensioners on discharge was as follows:—Much Improved, 3; Improved, 5; and the total number of days spent in the sanatorium by these patients was 843, equal to an average duration of residence of 105.4 days per patient.

5 tuberculous pensioners were admitted to Englethwaite Tuberculosis Colony for combined treatment and training, and 3 were discharged. The condition on discharge was Much Improved, 1; Improved, 1; Unchanged, 1. 1 of these was subsequently re-admitted, and another was admitted to the Blencathra Sanatorium for further treatment.

PUBLIC HEALTH (VENEREAL DISEASES) REGULATIONS, 1916.

Diagnosis and Treatment of Venereal Diseases.

During the year 236 persons residing in Carlisle, 163 of whom were males and 73 females, were under treatment or observation at the clinic at the Cumberland Infirmary. This shows an increase of 44 persons on the figure for the previous year. 123 patients were found to be suffering from syphilis, 4 from non-syphilitic chancre, 83 from gonorrhœa, and 26 from conditions other than venereal. 152 new patients attended for the first time during the year, as compared with 154 for the previous year.

1,792 attendances were made by these patients, an increase of 293 over the figure for the previous year. In addition, 1,383 attendances were made by patients for intermediate treatment by irrigation, &c., which was supervised by a medical orderly, which, with the exception of Sundays, is provided daily. No facilities for the intermediate treatment of female patients have been provided, which are very necessary for the treatment of gonorrhœa in the female.

One male patient belonging to Carlisle was permitted to be taken into the Infirmary as an in-patient, and in the case of one female patient resident in Carlisle treatment and supervision was of such an urgent nature that she was sent as an in-patient to the Hope Hospital, Leeds, and was still under treatment at the end of the year.

The out-patient clinic, as previously, has been carried on in the temporary accommodation.

As in previous years, Professor Dean, of the University of Manchester, has been responsible for the work in connection with the examinations and reports upon the various pathological specimens submitted under the Authority's scheme, in addition to which 101 tests were made upon specimens taken from patients residing in Carlisle by Dr. Mc.Murtrie, the Clinical Officer.

The number of medical men practising locally who were entitled to receive supplies of salvarsan substitute was 4, and during the year in this connection 3 doses, containing .4 grms. of galyl, were supplied.

Return relating to all persons resident in the City of Carlisle who were treated at the Treatment Centre at the Cumberland Infirmary during the year ended the 31st December, 1921 :—

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		Total.	
	M	F	M	F	M	F	M	F	M	F
1. Number of persons who, on the 1st Jan., 1921, were under treatment or observation for	34	24	...	...	21	5	...	...	55	29
2. Number dealt with during the year in the Out-patient Clinic for the first time and found to be suffering from	43	22	4	...	48	9	13	13	108	44
Total—Items 1 and 2	77	46	4	...	69	14	13	13	163	73
3. Number of persons who ceased to attend the Out-patient Clinic										
(a) before completing the first course of treatment for	10	9	2	...	22	5	...	...	34	14
(b) after one or more courses, but before completion of treatment for	8	9	...	...	...	...	...	...	8	9
(c) after completion of treatment, but before final tests as to cure of	8	5	1	...	4	...	...	..	13	5
4. Number of persons transferred to other Treatment Centres after treatment for	1	2	...	...	2	...	...	...	3	2
5. Number of persons discharged from the Out-patient Clinic after completion of treatment and observation for	3	...	1	...	12	1	...	...	16	1
6. Number of persons who, on the 1st Jan., 1922, were under treatment or observation for	47	21	...	...	29	8	...	..	76	29
Total—Items 3, 4, 5 & 6	77	46	4	...	69	14	...	...	150	60

7. Total attendances of all persons at the Out-patient Clinic :—3175.

8. Aggregate number of "In-patient days" of treatment given :—9

9. Number of doses of Salvarsan-substitute administered in Out-patient Clinic :—552.

Examinations of Pathological Material :—

	For detection of Spirochaetes Gonococci.		Other Organisms.	For Wassermann Re-action.
(a) Specimens which were examined at, and by the Medical Officer of, the Treatment Centre	17	62	22	...
(b) Specimens from persons attend- ing at the Treatment Centre which were sent for examina- tion to an approved laboratory	12	49	11	223

During the year propaganda work was carried out in Carlisle by Mr. Robert Whaites, of the National Council for Combating Venereal Diseases, comprising a lecture in the Co-operative Hall on the 28th October, and addresses to men at the following workshops and factories:—

- (1) Messrs. Ferguson Bros.
- (2) Midland Railway Co. (Loco. Department).
- (3) Messrs. Carrick & Sons, Ltd.
- (4) Glasgow & South Western Railway Co. (Loco. Dept.).
- (5) Messrs. R. R. Buck & Sons.
- (6) Gas Works.

In each of the works a director or other representative acted as Chairman, and in his remarks Mr. Whaites says that the men appreciated the addresses and gave him the impression that they were conscious of the value of propaganda work.

The men's meeting in the Co-operative Hall on the 28th October was well attended. Much interest was shown and many questions were asked, and the remarks of the Mayor, Mr. Councillor Campbell, who was in the chair, were very effective.

Comparing the statistics for 1920 and 1921 for the work throughout the whole County, including Carlisle, Dr. McMurtrie is impressed by the decrease in the number of new cases of Venereal Diseases attending the clinics, while at the same time the total attendances, the total number of persons under treatment, and the total number of doses of salvarsan substitutes administered and of tests performed have increased, and he is of opinion that the decline in the number of new cases of Venereal Diseases may be discussed under the following headings:—

- (a) Waning popularity of the clinics.
- (b) More treatment being undertaken by practitioners.
- (c) Decline in the incidence of Venereal Disease.

(d) The year 1920, being the first complete year in which the clinics were open, was an abnormal year, there being an accumulation of cases waiting for treatment.

With regard to (a), this suggestion may be dismissed, seeing that the total attendances and the total number of persons dealt with were both increased, and that there was also an increase in the number of *new* patients who sought advice in respect of conditions which were found not to be venereal.

With regard to (b), there does not appear to have been any sudden enthusiasm on the part of medical practitioners to treat. On the contrary, a larger proportion of persons than formerly attending the clinics were referred by doctors.

With regard to (c), an actual decline in the incidence appears to be a more rational explanation, since a very large number of persons have been rendered non-infective by treatment at the clinics. This is especially true with regard to syphilis, but other factors, such as unemployment and scarcity of money, must not be entirely eliminated.

With regard to (d), the number of new cases in 1920 is probably the chief factor in the decline in 1921, but no definite conclusion can be arrived at until another year at least has elapsed.

With a view to acquiring further evidence as to the question of a possible decline in the incidence of Venereal Diseases in the district the following investigation was undertaken:—

All cases of primary and early secondary syphilis and of acute gonorrhœa attending all the clinics for the first time in 1920 and 1921 were taken. Only those cases in which the history and clinical signs indicating recent infection were quite definite were counted. The date of first attendance at the clinic (not the date of infection or of onset) was taken in determining the year in which each case was to be included.

ALL CLINICS, CUMBERLAND AND CARLISLE.

Recent infections only.			1920.	1921.	Decrease.
Syphilis	...	...	56	42	14
Gonorrhœa	...	...	48	31	17
Totals			104	73	31

It will be seen that there was a total decrease of 31 cases of undoubtedly recent origin in the year 1921, and it is therefore nearly certain that there has been a decline in the incidence of Venereal Disease in the past year. This decline at any rate can be partly attributed to the treatment carried out at the clinics.

In view of the fact that so many patients cease to attend before completing their treatment at the clinics the question has been raised whether it is worth while continuing the work.

To estimate accurately the number of patients who ceased to attend in 1921, it is necessary to add to the number of patients who did not attend after 30th June, 1921, that portion of those marked "still attending on 1st January, 1922," which will have to be marked "ceased to attend 1922." This cannot be ascertained at present, but can be accurately estimated by taking it at the same percentage as in the previous year. Any 1921 cases who cease to attend in any year subsequent to 1922 may be disregarded, as they will certainly have been rendered non-infective, if not cured, by that time.

NOTES ON FOLLOWING TABLE.

- Column 1—Cases of soft chancre have not been included, as the figures are too small to be of value.
- Column 3—Figures obtained by adding to the numbers who did not attend after 30th June, 1921, the numbers who were under treatment or observation in 1921, and who will cease to attend in 1922, calculated on the percentage for the previous year.
- Column 5—Patients marked "transferred" would practically all continue treatment, as only those were so marked who specially asked for their case records on leaving the district, or for whom definite arrangements for treatment elsewhere were made. The number "remaining under treatment" is arrived at after deducting the calculated number of those who will cease to attend in 1922. The sum of figures in Column 5 and the totals in Column 4 equal 100.
- Column 6—It is taken for granted that those who completed a course of treatment or remained under treatment have been or will be rendered non-infective.

Percentage "Ceased to Attend" and Percentage "Rendered Non-Infective."

1.	2. Total num- ber of per- sons under treatment or observa- tion in 1921.	3.			4.			5. Percentage discharged cured, transferred to other Centres or remaining under treatment.	6. Percentage rendered non-infec- tive or cured. (Sum of 4(b) and 5.)
		Number ceased to attend in 1921 and will cease to attend in 1922 (calculated).			Percentage ceased to attend in 1921 and will cease to attend in 1922 (calculated).				
		(a) Before completion of a course of treat- ment.	(b) After completion of a course of treat- ment.	Total (a) and (b).	(a) Before completion of a course of treat- ment.	(b) After completion of a course of treat- ment.	Total (a) and (b).		
Syphilis	253	60	124	184	23.7	49.0	72.7	27.3	76.3
Gonorrhœa	146	84	7	91	57.5	4.8	62.3	37.7	42.5
Totals	399	144	131	275	36.1	32.8	68.9	31.1	63.9

On looking at the figures in the last column of the table it will be seen that 76.3 per cent. of all cases of syphilis and 42.5 per cent. of gonorrhœa are rendered non-infective or are cured.

Both of these figures are actually considerably higher.

There are a number of cases ceasing to attend before completing a course of treatment who are cured, and a very large number non-infective at the time they ceased to attend. There is also an unknown number who continue treatment elsewhere on ceasing to attend the clinic.

The figure for gonorrhœa is no doubt very much below the real percentage. Very many cease to attend because they are cured and are unwilling to undergo the necessary tests, which take several weeks, before being discharged by the Medical Officer.

On the whole one is quite safe in saying that over 70 per cent. of all cases of Venereal Disease are either rendered non-infective or are cured. Surely under these circumstances it is worth while carrying on the work.

The actual number of patients suffering from syphilis and discharged cured during the year is inconsiderable (6). The reason is that no case is discharged until he has been under observation for two years after completing his treatment. The treatment on an average lasts about 9 months, so that only cases treated elsewhere prior to the opening of the clinics in Cumberland and Carlisle have had time to complete the period of observation.

During the year I made a special report on congenital syphilis in children of school age for the information of the Board of Education.

SUMMARY OF IMPROVEMENTS URGENTLY REQUIRED.

CUMBERLAND INFIRMARY.

A special report was submitted during the year detailing the requirements. These are briefly:—

Alterations, temporary or otherwise, in the premises, particularly the laying on of water and gas, and painting.

Facilities for the treatment by a nurse of women suffering from gonorrhœa in the interval between the clinics.

Provision of a more suitable irrigation room for men.
Provision of beds for in-patients, emergency or otherwise.

MATERNITY AND CHILD WELFARE.

During the year 1,251 notifications of births were received from doctors and midwives, 1,200 of which related to live births and 51 to still-births occurring after the 28th week of pregnancy. In 34 instances the birth was not notified, and in 7 instances only the birth was notified by some person other than the doctor or midwife.

HEALTH VISITORS.

The visits of the Corporation Health Visitors to the various houses in connection with the duties in respect of infant welfare and the welfare of expectant mothers were as follows:—

Total number of homes visited	...	...	11,277
Primary visits in connection with the notification of births	...	...	1,310
Re-visits as follows—			
0-1 year	...	...	4,369
1-2 years	...	...	3,094
2-3 years	...	...	2,031
3-4 years	...	...	1,542
4-5 years	...	...	1,122
		—	12,158
Total number of routine visits to children	...	...	13,468
Visits to boarded-out children	...	...	137
Visits to expectant mothers—			
Primary	...	...	184
Re-visits	...	...	305
Visits in connection with—			
Deaths of children under 5 years	...	...	158
Pneumonia and Bronchitis	...	...	343
Measles, Whooping Cough, and contagious diseases	...	...	431
Diarrhœa	...	...	87
Ophthalmia Neonatorum	...	...	106
Puerperal Fever	...	...	11
Other conditions	...	...	11

Number of attendances of Health Visitors—

Babies' Welcomes	...	...	...	66
Corporation Clinics—				
Ante-natal	...	...	...	47
Post-natal	...	...	...	48

INSPECTION OF MIDWIVES.

Notice of intention to practise was received from 10 midwives in January, 1921, in accordance with the provisions of the Midwives' Act, 1902; during the course of the year 13 other midwives notified their intention to practice, making a total of 23. 6 midwives left the district, and at the end of the year 17 midwives were on the register.

Midwives have been regularly visited at their homes, their mode of practice and case registers inspected, and their bags, appliances, clothing, and other matters supervised; to these ends 34 routine and 13 special visits were made. With regard to ophthalmia neonatorum, prophylactic treatment in a simple form is now given by the midwife in practically every case, and the good effect is, I think, reflected in the decrease of notifications of cases, especially in the latter part of the year; 17 cases were notified in the first six months of the year, and 7 only during the last six months.

No case of puerperal fever occurred in the practice of a midwife, and in no instance was disciplinary action taken.

Practising midwives attended 766 confinements.

Notices in accordance with the rules of the Central Midwives' Board were received in connection with the following conditions:—

Cases in which a midwife called for the assistance of a medical practitioner	...	...	27
Cases in which the midwife advised that medical help should be obtained	...	...	73
Notification of the intention to substitute artificial for breast feeding	...	...	38
Notification of Still-births	...	...	9
Notification of having laid out a dead body...			11
Notification of death of child before the arrival of the doctor	...	...	1

The following conditions were given as the reason for the substitution of artificial feeding:—

By doctor's orders on account of—

Nephritis	...	...	...	...	1
Operation for cleft palate and hare lip	...	...	...	...	1
Lack of secretion of breast milk	...	...	...	...	1
History of tuberculosis	...	...	...	...	1
Constitutional weakness of mother	...	...	...	...	3
No definite reason	...	...	...	...	10

By midwives on account of—

Insufficient breast milk	...	...	...	...	11
Necessity for mother to work	...	...	...	...	2
Bronchitis in mother	...	...	...	...	1
Hæmorrhage in mother	...	...	...	...	1
Mother removed to hospital	...	...	...	...	2
Continual weakness of mother	...	...	...	...	2
Disinclination of mother to breast feed the child	...	...	...	...	2

Total ... 38

Assuming that these figures represent the total number of cases in which artificial feeding was instituted during the period in which a midwife was in attendance, they give an indication of satisfactory activity on the part of midwives in the direction of correct infant feeding. As the figures show, the number of cases notified by midwives as about to be artificially fed was only a little more than half the number notified during 1920. In spite of this apparent improvement, however, it is unsatisfactory to find that one child in 20 attended by a midwife was weaned before the tenth day, a result which is far from ideal. The figure is further unsatisfactory because in the majority of cases no very satisfactory reason is given for the change from breast milk, and it is probable that in some of the cases where insufficient supply of breast milk is given as the reason for the substitution, perseverance on the part of the mother and perhaps greater pressure from the nurse might have obviated the necessity for weaning, while the fact that in two instances the mother refused the natural food to her infant in spite of the importunities of the midwife is exceedingly regrettable.

HOME NURSING.

Under the arrangement with the Carlisle District Nursing Association, the following services by the nurses of the Association were rendered:—

	No. of Cases.	No of Visits.
Ophthalmia Neonatorum	1	17
Bronchitis following Measles	1	15
	<hr/>	<hr/>
Total	2	32
	<hr/>	<hr/>

MATERNITY HOSPITAL.

(1) Remaining in hospital on 31st December, 1920	1
Number of cases admitted during year ...	143
	<hr/>
Total number of cases treated ...	144
	<hr/>

In three instances the mother gave birth to twins.

(2) Average duration of stay (days)	12.3
(3) Number of cases delivered by midwives ...	99
(4) Number of cases delivered by doctors ...	26
Number of cases treated during pregnancy	19
	<hr/>
	144
	<hr/>

14 cases, or 10 per cent. of the total admissions, were sent in by private practitioners.

(5) Number of cases in which medical assistance to the mother was necessary—

(a) Before labour	19
(b) During labour	28
Pelvic contraction	6
Delay	7
Eclampsia	2
Hæmorrhage	6
Prolapse of cord	1
Ruptured varicose veins... ..	1
Tumour of vulva	1
Retained secundines	3
Sarcomatous cachexia	1
(c) After labour	48
(d) For infant... ..	13

There were no cases of puerperal sepsis and none of ophthalmia neonatorum.

There were 2 maternal deaths, 1 from malignant sarcoma, and 1 from disease of the heart and kidneys.

There were 6 still-births and 7 deaths of infants before the seventh day.

In only 3 instances was the infant not entirely breast fed while in the hospital.

Diagnosis was confirmed by post-mortem examination in 3 cases, viz., intra-cranial hæmorrhage, congenital heart disease, and by Wassermann test of the mother's blood in 1 case of congenital syphilis.

8 specimens were submitted for laboratory investigation, viz., 3 of liver for examination for spirochætes, all of which were negative, and 5 specimens of blood from mothers for Wassermann test. 3 of the specimens gave a positive re-action, the remainder being negative.

ANTE-NATAL CLINIC.

At the clinic for expectant mothers, held each Friday, 177 new patients were seen during the year. These patients made a total number of 432 attendances.

In addition to these ante-natal visits to the hospital, 489 visits were paid by Health Visitors to the homes of the expectant mothers.

69, or 33 per cent., of these patients presented some disease or defect requiring treatment or advice.

INFANT CONSULTATIONS.

At the Clinics held each Tuesday for children up to 5 years of age there were 449 attendances. The children are weighed at each attendance and are examined by the Assistant Medical Officer. It is open to parents who are unable to pay the ordinary retail price for Dried Milk and Virol to obtain these at the Clinics at cost price.

The following abnormal conditions were observed amongst the children at the consultations:—

Malnutrition and rickets	...	...	...	27
Gastro-Intestinal disorders	...	...	...	62
Adenoids and tonsils	...	...	...	7
Respiratory diseases	...	...	...	28
Diseases of the Ear	...	...	...	3

Diseases of the Eye	...	...	...	...	4
Diseases of the Skin	...	...	...	..	14
Congenital defects	...	...	...	...	31
Congenital syphilis	...	...	...	...	23
Other conditions	...	...	..	...	14

VOLUNTARY AGENCIES.

(1)—BABIES' WELCOMES AND SCHOOLS FOR MOTHERS.

The meetings of the four voluntary centres at West Walls, Caldewgate, Botchergate, and Stanwix have been held regularly and have been well attended. A satisfactory feature has been the number of new babies who are brought to the centres, showing that the mothers set a value upon the instruction given in the management of very young children and the chance thus given of testing the physical progress of their children by accurate weighing.

The total number of sessions held at the four centres was 157. The number of children under 1 year of age who attended the centres was 1,572, and the number of children over 1 year was 2,885, making a total of 4,457 attendances, a considerable increase on the numbers for the previous year. An increase in the number of attendances of children over 1 year of age has been observed since the provision of machines for weighing these children. There were 169 new recruits to the centres, these being first visits of new babies.

Instruction on various subjects was given during the year, 6 lessons being given in cookery, and 7 in sewing and cutting out, while 47 talks on hygiene, and 57 on mothercraft were given.

The Corporation Assistant Medical Officer for Maternity and Child Welfare has attended each centre once a month and given advice to individual mothers and a general talk on health to all those present, while the Corporation Health Visitors have attended and assisted at each centre once a fortnight and have weighed the babies and kept accurate and continuous records of progress.

(2)—DAY NURSERY.

The small number of babies attending the Day Nursery in Abbey Street caused considerable concern to the Committee, and having regard to a communication of the Ministry of Health that the Ministry was unable in the circumstances to continue the grant, the Committee had no alternative but to close the premises.

During the period of the year, however, in which they were open very good work was done, and the children attending made very good physical progress and enjoyed good health.

FREE PROVISION OF MILK.

During the year 1,752 gallons of milk were supplied free to nursing mothers and infants.

A much larger number of applications for assistance in this respect were received than heretofore, and after investigation and careful consideration of the circumstances in each instance, milk was supplied to 154 families, in connection with which more complete particulars will be found on page 53.

STILL-BIRTHS.

The still-births notified during the year numbered 51, being 6 less than the number notified in 1920; the number of still-births notified by midwives was 9.

Table showing certain particulars regarding 51 still-births:—

			Legitimate.	Illegitimate.	Male.	Female.	Full Term.	8 Months.	7 Months or less.
		Total.	48	3	27	24	30	8	13
Instrumental Delivery ...	...	8	8	0	4	4	8	0	0
Malpresentations ...	...	8	8	0	3	5	7	1	0
Malformation of Child ...	...	1	1	0	0	1	0	0	1
Anti-partum Hæmorrhage ...	...	4	3	1	2	2	1	2	1
Marked Prematurity ...	...	2	2	0	2	0	0	0	2
Maternal Conditions—									
Eclampsia ...	...	1	1	0	1	0	0	1	0
Albuminuria ...	...	2	2	0	2	0	1	0	1
Anæmia ...	..	1	1	0	0	1	0	0	1
Strain ...	...	1	1	0	1	0	0	0	1
Unascertained ...	...	23	21	2	12	11	13	4	6

The bodies of 58 still-born children were given burial at the Carlisle Cemeteries. The slight discrepancy in numbers between the burials and the registrations is due to the fact that some of the babies buried at the Cemeteries had not reached the age of viability, in which case registration is not compulsory. The decrease in these still-births was entirely among the illegitimate births.

In 45 per cent. of the cases the factors causing the still-birth were not discovered. The illegitimate still-births comprised 4.2 per cent of the total illegitimate births, and the legitimate still-births comprised 3.9 per cent. of the total legitimate births, the difference being inconsiderable; whereas in 1920 the ratio of illegitimate still-births to the total number of illegitimate births was more than twice as great as the ratio of the legitimate still-births to the total number of legitimate births.

INFANT MORTALITY.

The total number of deaths of infants under 1 year during 1921 was 146, the number of deaths of residents being 138, equivalent to a nett infant mortality of 105.3 per 1,000 births registered. This is a higher infant mortality than that for 1920, which was an extraordinarily low one.

The fall in the birth-rate of itself contributes to a rise in the infant mortality rate for the year, for the deaths take place partly among the larger number of children who were born in the previous year. As a correction, the Registrar-General suggests using as a denominator 70 per cent. of the births of the current year and 30 per cent. of the births of the previous year. A calculation upon this basis would give a rate of 102.7 per 1,000. Excluding the decreased birth-rate as a factor, we would have to account for 21 deaths more than might have been expected. 50 deaths took place during the first 4 weeks of life, nearly all from causes generally classed as unavoidable. Of these

early deaths, 35 took place within 7 days, as compared with 25 in 1920, showing that a larger proportion than usual of children were born unfitted to cope with life, and in 15 instances the children lived less than 24 hours. 6 deaths at an early age were due to congenital malformations, as compared with 3 in 1920, but on the whole there was not a larger number of deaths than usual from congenital malformations.

One factor contributing to the higher rate was the larger number of multiple births, 13 deaths having taken place among such children; among such births was a case of triplets, of whom 2 died.

The number of deaths from bronchitis and pneumonia was about the same as in 1920.

3 diseases would appear to be responsible for the increase in infant mortality, viz., diarrhœal diseases, convulsions, and the condition vaguely described as marasmus.

As a contrast to the summer of 1920, which was cool and wet, we had in 1921 a long, hot, and dry summer, which made probable an epidemic of infantile diarrhœa. The mean earth temperature at 4 feet during the summer months also favoured an epidemic, as it remained during 5 months on an average 4 degrees higher than for the corresponding months of 1920. There were 29 deaths from diarrhœa, enteritis, and gastritis, as compared with 12 in 1920. Housing conditions in a large part of the City do not permit of sufficient care being taken in the prevention of food infection, so that when the temperature and other atmospheric conditions are also favourable a serious incidence of infantile diarrhœa is almost inevitable.

Of the deaths from convulsions, 5 took place in weakly children less than 3 weeks old.

Atrophy, debility, and marasmus accounted for 23 deaths, as compared with 17 deaths during 1920. It is

noteworthy that 1921 was a year of great industrial depression and anxiety, and it is possible that this condition may have accounted for some of the delicate children born, and it is to be regretted that when such conditions appeared to be at their worst, Imperial finances were such that the Ministry of Health was reluctantly obliged to call upon Local Authorities to largely decrease their expenditure in respect of the provision of free or partly free milk, and it may be that in some instances the effect of this economy is reflected in the mal-nutrition which accounts for the number of the deaths of infants under 7 days old.

In the months of June, July, and August, 1920, 108 vouchers for free milk were given, averaging about one and one-third pints per family, with an infant death-rate of 9 per 1,000. In the same months of 1921, 88 vouchers were given, each for half a pint only per family, with an infant death-rate of 28 per 1,000.

In the months of September, October, and November, 1920, 180 vouchers were given, averaging about one and one-third pints per family, with an infant death-rate of 19 per 1,000. In the same period of 1921, 46 vouchers were given, averaging half a pint per family, with an infant death-rate of 24 per 1,000.

The part played by the mode of feeding in the production of infant mortality is clearly shown in the following tables, which show that over a period of 10 years the mortality amongst breast-fed children was 45.8 per 1,000 gross births, whilst among partly bottle-fed infants it was 303.2 per 1,000 gross births, and amongst wholly bottle-fed infants 362.4 per 1,000 gross births.

In the table which compares the figures for 1920 and 1921 there is seen a large decrease in the use of the death-dealing long-tube bottles, for which the educational campaign against these bottles is largely, if not wholly, responsible.

INFANT MORTALITY,

With Deaths from stated causes, at various ages and in various seasons, of children under one year of age.

CAUSE OF DEATH.	AGE.										MONTH.												Total Deaths under One Year.
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 4 Weeks.	4 Weeks & under 3 Months.	3 Months and under 6 Months.	6 Months and under 9 Months.	9 Months and under 12 Months.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
All Causes. { Certified { Uncertified	33 2	8 ...	3 1	3 ...	47 3	23 ...	30 1	22 ...	12 ...	10 ...	9 1	13 2	16 ...	8 ...	12 ...	10 ...	9 ...	17 1	12 ...	11 ...	7 ...	134 4	
{ Diphtheria	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1
{ Whooping Cough	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	3
{ Influenza	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
{ Tuberculosis (all forms)	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	8
{ Bronchitis	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1
{ Pneumonia (all forms)	...	2	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	17
{ Diarrhoea	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	11
{ Enteritis	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	17
{ Gastritis	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	1
{ Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
{ Congenital Defects	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
{ Atelectasis	6	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1
{ Prematurity	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
{ Atrophy, Debility & Marasmus...	10	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
{ Injury at Birth	10	2	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3
{ Meningitis	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
{ Convulsions	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
{ Other Causes	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
Totals	35	8	4	3	50	23	31	22	12	10	10	15	16	8	12	10	9	18	12	11	7	138	

**Rates of Mortality among Infants at various ages, and
from the principal causes, per 1,000 births.**

Year	Nett Infant Mortality Rate.	AGES.					CAUSES.					
		Under 4 Weeks	4 Weeks and under 3 Months	3 Months and under 6 Months	6 Months and under 9 Months	9 Months and under 12 Months	Not Preventible.			Preventible.		
							Premature Birth	Atrophy, Debil- ity & Marasmus	Congenital Malformations and Atelectasis.	Diarrhoea and Enteritis	Bronchitis and Pneumonia	Whooping Cough
1909	123.6	47.9	26.1	20.9	14.8	13.9	21.7	17.4	7.0	20.9	13.1	4.4
1910	109.1	41.9	19.1	21.0	15.7	11.4	28.8	13.1	5.2	12.2	14.8	4.4
1911	145.0	45.0	27.0	27.0	25.2	20.8	18.0	12.6	4.5	37.9	26.1	9.0
1912	102.4	42.0	15.8	16.6	17.5	10.5	15.8	15.8	9.6	9.6	21.9	6.1
1913	127.1	49.8	17.2	27.5	19.0	13.7	28.4	12.9	6.0	19.0	18.0	3.4
1914	122.4	48.0	25.6	21.5	15.7	11.6	19.8	15.7	5.6	20.7	18.2	5.8
1915	144.3	51.2	30.2	26.8	14.3	21.8	30.2	12.6	5.9	15.9	20.1	10.1
1916	101.5	47.1	13.6	16.3	15.4	9.1	27.2	7.3	8.1	17.2	14.5	0.0
1917	106.5	39.4	16.1	23.3	15.2	12.7	20.6	7.2	10.8	24.2	10.7	1.8
1918	126.8	38.7	17.4	26.1	30.0	14.5	22.3	10.6	4.8	14.5	25.2	19.4
1919	107.9	45.9	17.8	18.8	13.1	12.3	19.7	22.5	9.4	13.1	20.6	0.0
1920	80.0	30.2	13.4	19.3	10.5	7.0	16.1	11.9	9.1	8.6	13.3	3.5
1921	105.3	38.2	17.5	23.7	16.8	9.1	11.4	17.5	9.1	22.1	13.7	2.3

Infant Mortality Rates for the various Wards, 1918-1921.

Year	Stanwix & Etterby	Rickergate	Aglionby	Greystone	St. Nicholas	Currock	Denton Holme	St. Cuthbert's	Caldewgate	Newtown & Belle Vue	Carlisle
1918	108.7	141.2	135.4	101.7	94.9	93.8	125.0	193.3	156.2	97.2	126.8
1919	81.6	97.8	123.3	83.9	125.0	65.4	160.6	119.0	115.1	65.8	107.9
1920	46.5	77.5	54.3	100.0	68.6	57.4	81.6	113.2	87.0	78.4	80.0
1921	23.8	150.7	91.7	174.6	86.9	62.0	105.2	62.5	158.4	56.8	105.3

Table showing the deaths of Infants, legitimate and illegitimate, for the years 1920 and 1921, according to the mode of feeding.

MODE OF FEEDING.	Total Number so Fed.				Number of Deaths.				Mortality Rate per 1,000.			
	Legitimate.		Illegitimate.		Legitimate.		Illegitimate.		Legitimate.		Illegitimate.	
	1920	1921	1920	1921	1920	1921	1920	1921	1920	1921	1920	1921
Breast-fed	1118	1007	21	30	40	40	0	1	35.8	39.7	0	33.0
Partly bottle-fed and partly breast-fed ...	93	104	6	9	16	45	1	1	172.0	432.7	166.6	111.1
Wholly bottle-fed—												
(1) Boat-shaped bottle...	111	78	16	13	23	21	3	0	207.2	279.2	187.5	0
(2) Tube bottle ...	15	4	1	1	3	1	1	0	375.0	250.0	1000.0	0
Debilitated children—												
(1) Spoon-fed ...	8	8	0	0	5	8	0	0	625.0	1000.0	0	0
(2) Unable to be fed ...	20	20	1	2	20	20	1	2	1000.0	1000.0	1000.0	1000.0
No information re feeding ...	43	48	1	8	9	7	0	0	209.3	145.8	0	0

Table showing the Death-rate per 1,000 infants under 1 year. classified according to the Method of Feeding, 1912—1921.

Mode of Feeding.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	Average 10 years.		
											No. of Children.	No. of Deaths.	Mortality Rate.
Total infant mortality rate ...	102.4	127.1	122.4	144.3	101.5	106.5	126.8	107.9	80.0	105.3	11783	1316	111.7
Mortality rate for breast-fed infants	46.0	45.1	58.3	7.49	4.43	25.3	49.6	44.2	35.1	39.6	9360	429	45.8
Mortality rate for infants partly fed on breast and partly on bottle ...	100.0	833.3	400.0	500.0	133.3	515.1	122.2	378.4	171.7	407.7	465	141	303.2
Mortality rate for infants fed by bottle ...	401.6	491.7	476.6	612.0	428.6	324.3	520.4	230.3	209.8	229.2	1181	428	362.4

INFANT MORTALITY AND RAINFALL.

Year.	Rainfall in Inches.	Number of days on which rain fell.	Infant Mortality.
1909	33.13	162	123.6
1910	29.64	197	110.0
1911	30.20	181	145.0
1912	30.01	217	102.4
1913	27.53	194	127.1
1914	28.31	201	122.4
1915	28.28	183	144.3
1916	38.97	228	101.5
1917	29.13	176	106.5
1918	33.65	190	126.8
1919	25.21	191	107.9
1920	32.11	211	80.0
1921	29.83	205	105.3

With the exception of the year 1918, during which a high infant mortality was produced by a severe epidemic of whooping cough, aided by the low birth-rate, and perhaps conditions affecting mothers, incident to a long war, it is observed that in a marked manner the infant mortality in each year varies inversely as the number of days on which rain fell, and if these figures were prepared in the shape of a graph, this would be seen at a glance. The regular and thorough watering of all streets in dry weather is therefore a most important hygienic measure.

ILLEGITIMACY.

The number of illegitimate births registered was 72, *i.e.*, 54.9 per 1,000 registered births, which was less than the figure for 1920. The number of deaths of illegitimate children was 9, or 111 per 1,000 illegitimate births, while the deaths of legitimate children numbered 129, or 104 per 1,000, legitimate births. This discrepancy between the legitimate and illegitimate infant mortality rate is not so marked as it is in some other parts of the country.

The boarded out children are frequently visited by the Corporation Health Visitors, who made 137 visits to the homes of such children during the year.

PUERPERAL FEVER.

3 notifications relating to post-partum fever were received during the year.

During the same period 2 deaths took place from this condition, 1 being one of the cases notified, the other being a case which was not notified, and which did not come to my notice until after the death of the woman.

OPHTHALMIA NEONATORUM.

24 cases of ophthalmia neonatorum were notified during the year, a decrease of over 57 per cent. on the figures for 1920, which contained a number of very slight cases which were never actually purulent. 6 cases were notified by medical practitioners, 13 cases by midwives, and 5 by both a doctor and a midwife. In 19 instances both eyes were affected, and in 5 only one eye was affected. In one instance there was slight damage to one cornea, which will probably clear up to a considerable extent, but which does not affect the vision. In one case the child died of convulsions after the ophthalmia was cured.

On receipt of a notification of ophthalmia a Health Visitor visits each case and gives advice and insists upon treatment, visiting the case frequently afterwards. During the year 106 visits were paid by Health Visitors to the 24 cases in question.

2 cases attended the out-patient department of the Cumberland Infirmary, and 1 case was attended by a nurse of the Carlisle District Nursing Association on behalf of the Corporation, 17 visits being paid by their nurse.

CASES.			Vision un-impaired	Vision impaired	Total Blindness.	Deaths.	Remarks.
Notified.	Treated.						
	At Home.	In Hospital.					
24	24	Nil.	24	Nil.	Nil.	Nil.	One child who had suffered and recovered, died ten days later of convulsions.

MEASLES.

The City was remarkably free from Measles during the year, few cases having come to my notice.

WHOOPING COUGH.

195 cases of whooping cough came to my notice during the year. 3 deaths took place from this disease in children under 1 year of age, and 4 in children between 1 and 5 years of age.

CHICKENPOX AND MUMPS.

99 cases of chickenpox and 153 cases of mumps came to my notice during the year.

DIARRHŒA.

During the year 28 infant deaths and 9 others were registered as due to diarrhœa, gastritis, and enteritis, as against 12 in 1920; the increase may be put down partly to the heat and prolonged dryness of the summer. An even more important factor was the earth temperature at a depth of 4 feet, with which the diarrhœal death-rate has been shown to vary directly; the figures below show how this compared with the reading for 1920:—

Month.					Mean Earth Temperature at 4 feet depth.	
					1920.	1921.
July	...	...	...	...	56.4	60.4
August	...	...	...	...	56.1	59.0
September	...	...	...	...	55.3	57.0
October	...	...	...	...	52.6	54.5
November	...	...	...	...	47.9	56.3

The mortality rate for diarrhœa and enteritis was 0.69 per 1,000 living at all ages, as compared with 0.33 per 1,000 in 1920.

Table showing the age distribution of deaths from Diarrhœal Disease.

Ages ...	0 to 1	1 to 2	2 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and over
Diarrhœa	11	...	...	1	...	..	...	...	...	...	...	...
Enteritis	10	..	..	1	...	...	...	1	...	...	..	...
Gastro- enteritis	7	2	1	...	...	...	...	...	1	2	...	...
Totals	28	2	1	2	...	...	...	1	1	2	...	...

Enquiries show that of the 28 infant deaths from these diseases only 5 had been breast fed in infancy, *i.e.*, 17.8 per cent., as compared with the general rate of 77.9 per cent. for breast feeding.

POLIOMYELITIS.

1 notification relating to poliomyelitis was received, but the diagnosis was incorrect.

DEATHS AMONG CHILDREN AGED 1—5 YEARS.

36 deaths occurred among children aged 1—5 years from causes detailed hereunder:—

Infectious diseases	...	...	...	...	9
Tubercular diseases	...	...	...	...	3
Respiratory diseases	...	...	...	...	5
Gastro-Intestinal diseases	...	...	...	...	6
Other diseases	...	...	...	...	13

HYGIENE OF PLACES OF PUBLIC ENTERTAINMENT.

During the past year the various theatres and cinematograph houses in the City have from time to time been visited, and in connection with the circular letters of the Home Office and the Ministry of Health, dated the 25th August, 1920, I made special visits to each. Following upon a report which I submitted to the Clerk to the Magistrates, improvements of a very satisfactory kind, making for improved hygiene and for the comfort and well-being of patrons, have been effected at the following entertainment houses during the year:—

Her Majesty's Theatre.

The New Public Hall, Chapel Street.

The Picture House, Botchergate.

The Stanley Hall, Botchergate.

The Star Picture House, Denton Holme.

REPORT OF THE VETERINARY INSPECTOR.

During the year 192 newly purchased cows were examined in the several byres of the City, amongst which the following conditions were found:—

Diseases of the Udder	...	...	...	6
Blood in Milk	...	...	...	1
Disease of Lungs	...	...	...	1
				<hr/>
				8
				<hr/>

These 8 animals were returned to the sellers.

The bovine animals exposed for sale at the Sands Cattle Market, and also at the Auction Marts, were examined, a total of 45,730 such examinations being made.

The Auction Marts were visited each Monday in the year, and 9,891 pigs were examined.

6 carcasses of beef were examined at the Public Abattoir, which with one exception I certified to be unfit for human consumption.

A total of 4,356 examinations of milk cows were made in the several byres of the City, in order to ascertain the presence of disease likely to affect the milk supply, in the course of which the following conditions were found:—

Gastric derangement	...	...	...	6
Milk fever	...	...	...	5
Septicæmia	...	...	...	4
Pneumonia	...	...	...	4
Redwater	...	...	...	2
Chill	...	...	...	1
				<hr/>
				22
				<hr/>

The milk of these animals was destroyed until convalescence was established.

The Corporation horses, 20 in number (including one used by the Committee of the Burial Board), have been under close observation, and have been free from serious illness during the year.

On 2 occasions I received notice that a cow in one of the City dairies had died suddenly. As certain administrative orders have to be carried out in such cases, I took specimens of blood for microscopical examination, which gave negative results for the anthrax bacillus.

On account of the outbreaks of foot and mouth disease in Ireland during the early part of the year, the Ministry

of Agriculture and Fisheries issued an Order that all animals arriving in this area from Ireland were to be placed under detention for 14 days. This Order was subsequently amended, prescribing a detention of 21 days, with instructions that the cattle were to be frequently examined by the Veterinary Inspector of the Local Authority. Before the first Order was received many of the animals had been in contact with others, which necessitated the latter animals also being placed under detention.

During the period under review I examined 3,637 cattle, 178 pigs, and 333 sheep, which, with 3 exceptions, I found to be free from disease, particularly foot and mouth disease.

On the 29th March I found a roan stripper cow, the property of a local cattle dealer, seriously ill, presenting the following signs:—ulceration of tongue, lameness, and high temperature. I reported the condition of this animal to the Ministry of Agriculture and Fisheries, whose Inspector examined her on two occasions. 2 other ailing animals were also kept under supervision for some days. One subsequently recovered and the other died of pneumonia.

On August 10th, during my inspections in one of the Auction Marts, 3 animals were found to be suffering from the following conditions:—

- (1) A cow in an emaciated condition, suffering from actinomycosis of the tongue.
- (2) A calving heifer with actinomycosis of the jaw.
- (3) A calf suffering from septicæmia.

I drew the attention of the auctioneers to the condition of the animals and they were withdrawn from sale and slaughtered at the Public Slaughter-houses. The carcasses of the cow and calf were condemned and destroyed, the carcase of the heifer, with the exception of the head and tongue, being passed as fit for food.

HOUSING.

Since the commencement of Housing under the Government Scheme, the Corporation has received the sanction of the Ministry of Health to the erection of 228 houses, 162 of which are of the parlour type and 66 of the non-parlour type, 56 to be erected at Denton Street

and Boustead's Grassing, 74 at Stanwix, and 98 at Longsowerby.

The total number of houses erected under these conditions to the end of 1921 was 116, of which 56 are at Denton Street and Boustead's Grassing, 34 at Stanwix, and 26 at Longsowerby. With regard to the work of the past year, 94 houses were completed, leaving still to be completed 40 of the parlour type of house at Stanwix, and 66 of the parlour type and 6 of the non-parlour type at Longsowerby.

In addition to these housing activities of the Corporation, 2 houses of the parlour type were built and completed by private enterprise during the year.

The building of the total number of houses for which the Local Authority has received the sanction of the Ministry of Health will, when completed, still leave a large deficiency in the requirements of new houses, and this deficiency is likely to be more marked as the Authority's activities in respect of insanitary property progress.

The complete removal of a large number of the most insanitary houses is imperative, and the re-modelling or re-construction of a large proportion of the remainder will be necessary if the Corporation are to effect improvements at all likely to benefit the public health. But however one approaches this important question, whether it be in respect of the erection of new houses as additional houses, or the erection of new houses to supply the wastage caused by demolition or re-construction, one becomes less sanguine of a satisfactory solution being arrived at so far as one can foresee within a reasonable period of time.

I had hoped that during the year just passed the Authority would have been able to effect satisfactory improvements in certain parts of the City by means of Closing Orders or by means less drastic, such as ordering improvements under Section 28 of the recent Act, or considerable repairs effected otherwise, but owing to the many and various international, national, local, and economic changes such improvements became impossible, but I am hopeful that during another year conditions may become less complex, and that we may be able to

make a start in some such way as may in time lead to a satisfactory solution of the present apparent impasse.

In addition to the following, other particulars as to housing inspections and remedial measures will be found on pages 66-68 and 80 and 81.

The subjoined table gives particulars relating to certain houses dealt with, in connection with which certain matters require to be done:—

Number and Situation.	Date represented to Committee.	Date of Closing Order served under Housing, Town Planning, &c., Act, 1909	Date of Demolition Order served under Housing, Town Planning, &c., Act, 1909	Remarks.
1, 2, 3, 4, 5, 6, 7, & 9 Barley Stack Lane	21st Nov. 1913	9th Dec., 1913	10th June, 1914	Part of the property demolished, the other part still standing
12, 14, 16, 18, 22, 26, & 28 Chapel Street	19th June, 1914	15th July, 1914	14th Sept., 1915	<i>In statu quo</i>
5 houses in Donald's Court, Willow Holme	19th June, 1914	15th July, 1914	14th Sept., 1915	Do.
3 houses, Willow Holme	19th June, 1914	15th July, 1914	14th Sept., 1915	Do.
Fay's Lodging House, Drovers Lane, Rickergate	2nd Dec., 1921	13th Dec., 1921	..	...

Table showing number of dwelling houses erected in the City during the past ten years:—

Year.	No. of Houses erected.	Year.	No. of Houses erected.
1912	11	1917	2
1913	18	1918	0
1914	38	1919	2
1915	9	1920	27
1916	1	1921	96

Number of New Houses erected during the year :—

(a) Total.	96
(b) As part of a municipal housing scheme.	94
<i>1.—Unfit Dwelling Houses.</i>	
<i>Inspection.</i> —(1) Total number of dwelling houses inspected for housing defects (under Public Health or Housing Act)	
	453
(2) Number of dwelling houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	320
(3) Number of dwelling houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	10
(4) Number of dwelling houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation	46
<i>2.—Remedy of Defects without Service of formal Notices.</i>	
Number of defective dwelling houses rendered fit in consequence of informal action by the Local Authority or their officers	
	Nil
<i>3.—Action under Statutory Powers.</i>	
(a) Proceedings under Section 28 of the Housing, Town Planning, &c., Act, 1919—	
(1) Number of dwelling houses in respect of which notices were served requiring repairs	Nil
(2) Number of dwelling houses which were rendered fit	
(a) By Owners	Nil
(b) By Local Authority in default of Owners	Nil
(3) Number of dwelling houses in respect of which Closing Orders became operative in pursuance of declarations by Owners of intention to close ...	Nil
(b) Proceedings under Public Health Act—	
(1) Number of dwelling houses in respect of which notices were served requiring defects to be remedied	133
(2) Number of dwelling houses in which defects were remedied	
(a) By Owners	115
(b) By Local Authority in default of Owners	Nil

(c) Proceedings under Sections 17 and 18 of the Housing, Town Planning, &c., Act, 1909—	
(1) Number of representations made with a view to the making of Closing Orders	1
(2) Number of dwelling houses in respect of which Closing Orders were made ...	1
(3) Number of dwelling houses in respect of which Closing Orders were determined, the dwelling houses having been rendered fit	Nil
(4) Number of dwelling houses in respect of which Demolition Orders were made	Nil
(5) Number of dwelling houses demolished in pursuance of Demolition Orders ...	Nil

CHIEF INSPECTOR'S ANNUAL REPORT.

To the Chairman and Members of the Health Committee.

I have the honour to submit my Annual Report upon the work of the Sanitary Inspectors during the year 1921.

HOUSING.

This subject has during the year had my careful consideration.

The housing standard as set up by the Ministry of Health is, in the present circumstances, high and impossible of attainment without re-modelling a large number of the existing houses, and this could only be done by the displacement of a large number of the tenants.

The difficulties in the way, and they are national, are :—

(1) The absence of a number of small and reasonably cheap houses wherein to accommodate the people who will be displaced by any improvement scheme which may be adopted.

(2) The high prices of materials and labour.

(3) The inability of many owners to find money for the purpose of carrying out the necessary alterations, the estimated cost of which is so large in many cases as to

exceed the value of the property. A few owners have intimated that they would prefer to close the houses rather than incur the heavy cost of re-construction.

Apart from the houses which are lacking in essentials, and which may be described as more or less unfit for human habitation, there is the question of accumulated repairs which are needed to a large amount of dwelling-house property. These repairs in many cases are so extensive in character that it is very difficult to properly execute them without temporary vacation by the tenants.

The difficulties just mentioned will, for some time at least, retard progress, and houses which have long been scheduled as unfit for human habitation, will, for the present, have to be condoned and not condemned. This is to be regretted, as the lack of accommodation undoubtedly causes great inconvenience and discomfort to many people, especially where two or more families occupy the same house, which is not uncommon, but anxiety is felt at the number of cases of indecent overcrowding, by which is meant the use of a sleeping room in common by persons of both sexes of adult age.

Your Inspectors, however, have done much useful work during the year in the way of inspections. No less than 320 houses were specially examined, particulars of all defects noted, and specifications of requirements prepared.

Included in the above are all the houses at Upperby and Belle Vue, which were so examined, the nature, situation, and type of each house being indicated on a plan for reference when the drainage of these houses will be connected to the new sewerage scheme, at present being carried out.

133 notices were served requiring necessary repairs to houses, and with the exception of 18 cases all the works were completed at the end of the year.

DRAINAGE.

During the year 715 inspections of drains were made, and in 46 cases tests, either chemical or smoke, were applied. When rats are reported to be present on premises drains are always suspect, and the test is frequently employed in consequence. 29 new drains were laid, and in 10 other cases repairs were made to existing drainage, all under the supervision of your Inspectors.

In a few cases we had reason to suspect that the misuse of drains by tenants had caused stoppages, and they were required to cleanse the drains at their own expense. Drains used in common by tenants of many houses are liable to rough usage, and are always a source of trouble.

NUISANCES.

Routine inspection reveals the existence of many nuisances, and in addition we received 216 complaints at the office. These received attention, 358 notices being served during the year to abate nuisances arising from choked w.c.'s, drains, offensive accumulations, improper keeping of fowls, dirty houses, &c.

We have on hand a few cases of the latter which call for delicate handling, a typical case being that of an old man living alone with apparently no relative or person to attend to his needs. He revolts against the suggestion of an institution as interfering with his rights as a free citizen, and yet he will exist under conditions which are filthy and abominable.

VAN DWELLERS.

No infectious disease was reported amongst van dwellers during the year, and strict enquiries were made of all the dwellers at Fair times. Most of the vans were accommodated on the Sands, but in one or two instances they were on private ground, without, however, committing any serious nuisance.

STABLE PREMISES.

Numerous visits were paid to stable premises, more particularly during the hot weather, for the purpose of discouraging the storage of manure. The effect of this, along with the distribution of posters on the subject, was to minimise the danger from house flies in congested parts of the City. With the increase in amateur gardeners there is a larger demand for manure, and the usual complaint is that of delay in removing.

COMMON LODGING HOUSES.

There is now only one registered common lodging-house in the City, that belonging to the Corporation, and known as Lowther House. This house is in every way

adapted for the reception of lodgers, and is a great improvement on the type of house usually employed for the purpose.

A midnight inspection was made on one occasion for the purpose of ascertaining whether a certain house was being illegally used as a common lodging-house.

WATER SUPPLIES.

In the routine inspections of the City we discovered waste of water on 30 premises, and a notice was in each case sent to the Water Engineer.

FACTORIES AND WORKSHOPS.

The number of workshops on the register is 292, and that of factories 90. In the appendix will be found a classified list of the workshops, showing the trades upon which they are engaged. 685 inspections have been made to these places during the year, and we found little cause for complaint. 23 notices were served requiring the abatement of nuisances arising.

I received from His Majesty's Inspector of Factories 10 notices relating to sanitary defects, and in each case prompt attention was given to the matters complained of, and the Factory Inspector subsequently acquainted with the result of our action.

5 lists of out-workers were received from tradesmen who give out work by contract.

BAKEHOUSES.

There are 62 bakehouses on the register, including 13 domestic and 4 public bakehouses (a place where people take their dough and other food stuffs to be baked). 3 of the bakehouses are underground.

The bakehouses are regularly inspected, and periodical limewashing and cleansing enforced as prescribed by the Factory and Workshop Act.

SMOKE NUISANCE.

There is no serious offence to report under this heading. One or two offences were observed, but a timely warning had the desired effect.

INSPECTION OF MEAT AND OTHER FOODS: PUBLIC MARKETS, &c.

The market stalls and shops exhibiting food for sale are under frequent observation, as well as the Abattoir and Railway Slaughter-houses.

Visits are regularly paid to premises used for the make up of foods, and absolute cleanliness insisted upon. During the year a letter respecting the unsatisfactory condition of cloths used for the covering of meat in transit was addressed by your Medical Officer of Health to all the butchers, with good results.

SLAUGHTER-HOUSES.

During the year the Public Abattoir was repainted and otherwise improved, and the place has been kept in a satisfactory condition.

The North Eastern and Midland Slaughter-houses are still in use, but the licence for the former will soon expire and the Slaughter-house will cease to be used as such after a three months' period of grace.

With regard to the Midland Slaughter-house, the alterations referred to in the last report are now in hand by the Midland Railway Company, and it is hoped to make this Slaughter-house serve the purpose of both Railway Slaughter-houses in the future. Alterations according to our specifications are to be carried out.

Particulars as to the nature and number of animals dealt with will be found in the appendix.

DAIRIES, COWSHEDS, AND MILKSHOPS.

The whole of the 42 cowsheds have received the attention of your Inspectors. Limewashing and general cleanliness have been the rule. Structurally, the cowsheds, with 3 exceptions, are good.

During the year 2 dairy farms at Upperby and 1 at South Henry Street were discontinued, leaving the number on the register 25.

The total number of milkshops on the register is 12. These places are frequently inspected, more especially during the summer months, when attention is paid to cleanliness and proper covers for milk vessels.

FRIED FISH AND POTATO SHOPS.

There are 31 fried fish and potato shops on our register. This trade requires, and receives, the regular attention of your Inspectors, who made 160 inspections during the year.

Structural alterations were made at 1 shop, and at 3 premises new modern apparatus was fitted.

Whilst these shops perform a useful service, it is to be regretted that considerable nuisance arises from the carelessness of the public, who frequently consume this article outside, and afterwards litter the streets with paper.

ICE CREAM SHOPS.

Every effort is made by your Inspectors and the vendors themselves, to secure cleanliness in the manufacture of this commodity. Mechanical methods are rapidly superseding hand labour in its manufacture. The premises receive regular attention in the season.

OFFENSIVE TRADES.

The offensive trades in the City consist of 1 gut-scrapers, 2 tripe dressers, 1 tanner, and 1 fellmonger.

The businesses have been conducted in a satisfactory manner. In 1 case attention was drawn to the fouling of a stream by a manufacturer.

FOOD AND DRUGS ACTS.

A total of 140 samples was purchased under these Acts (see appendix for details).

REFUSE REMOVAL.

House refuse collection is carried out on the same principle as in previous years. The central portion of the City has a daily collection, and the other portions a thrice weekly collection. The whole of the refuse is disposed of by tipping at the several tips, which are properly soiled and deodorised, leaving only the actual tipping area exposed. Several acres of ground have thus been reclaimed, and are being used as grazing land or cultivated as gardens.

The garbage from the slaughter-houses was also disposed of by tipping, and amounted to 314 loads.

In my report last year I drew attention to this wasteful method of tipping valuable manure, but regret that it is still being disposed of unprofitably.

During the year we were called upon to remove the refuse from about 100 new houses in connection with the Corporation Housing Scheme.

Private persons are allowed to tip refuse at the Corporation tips free of charge. I am of opinion that a small charge should be made for this privilege, which would provide a source of revenue.

DEPOT.

The stud of horses at the dépôt, Boustead's Grassing, numbers 19. Part of the stud is engaged on house refuse removal work, and part for scavenging, &c. During 1921 1 horse was bought to replace 1 sold.

SHOPS ACT.

The closing hours of shops are regulated by the several Closing Orders made under the Shops Act, 1912, and the Shops (Early Closing) Act, 1920.

An Amending Order provides that shops may be kept open until 9-30 p.m. on week-days and 10 p.m. on Saturdays for the sale only of fruit, table waters, chocolates or other sugar confectionery, and ice cream.

Numerous day and evening inspections were made during the year, and warnings given on several occasions, but no legal proceedings were taken. The amending order further complicates the proper regulation of the hours of closing. Shop-keepers who retail the above articles generally stock other articles for which the closing hour is 8 p.m., with the result that control is very difficult. We have had many complaints of selling indiscriminately, which have required numerous visits.

INFECTIOUS DISEASE AND DISINFECTION.

The Inspectors were called upon to investigate 155 cases of infectious disease, and 114 cases were removed to hospital for isolation. All the houses from which the cases were notified were either sprayed with formaldehyde or cleansed under supervision. The number of articles of bedding, clothing, &c., disinfected is set out in the appendix.

RAT REPRESSION.

Under the provisions of the Rats and Mice (Destruction) Act, 1919, all premises whereon rats were known to exist have been visited and instructions given with regard to the destruction of the vermin. Posters were drawn up and posted at various parts of the City, drawing attention to the obligations of persons with rat-infested premises. Leaflets containing advice and formulæ for poisons were also distributed.

On the 30th September last the Health Committee passed a resolution offering 2d. per head for all rats caught within the City and delivered at the dépôt, Boustead's Grassing. During the period 1st October to 31st December 550 dead rats were received and destroyed in the refuse destructor.

Your Inspectors have made 201 visits of investigation into the presence of rats, and have endeavoured to see that steps were being taken to rid the pest. 12 drains were tested by smoke and otherwise in consequence of 16 complaints received, and 11 drains were relaid or repaired.

POLLUTION OF STREAMS.

The fouling of the mill race at Shaddongate and the stream known as Dow Beck have necessitated the employment of manual and horse labour on two or three occasions in the cleansing of these watercourses. In the case of the mill race at Shaddongate the damage is done by adjoining tenants, who tip into the water every conceivable article, in addition to ashes.

DISEASED AND UNSOUND FOOD.

The following table shows the amount of food seized or surrendered as being unfit for human consumption:—

Nature of Food Condemned.					Quantity.			
					Tons.	Cwts.	Qrs.	Lbs
Beef ...	...	...	...	...	15	5	2	22
Mutton	...	...	...	...	0	14	1	23
Pork	...	...	...	...	0	1	3	0
Veal	...	...	...	...	0	9	0	3
Rabbits	...	...	...	...	35½	couples		
Condensed Milk	...	...	...	...		9	tins.	
Partridge	...	...	...	...		½	-brace.	
Tinned Beef, Salmon, &c.	...	...	...	...		16	tins.	
Tinned Pears, Tomatoes, &c.	...	...	...	...		93	tins.	
Tinned Rabbits	...	...	...	...		2	tins.	
Prunes	...	...	...	...		350	lbs.	

SALE OF FOOD AND DRUGS ACTS.

**Table showing articles purchased during the year,
with results of Analyses and remarks as to action taken
thereon.**

Article.	No. of Samples.	No. found to be Genuine.	Number Adulter- ated.	Extent and Form of Adulteration.	Remarks.
Baking Powder	11	11	...	Genuine	...
Lard ...	16	16	...	"	...
Coffee ...	14	14	...	"	...
Self-raising Flour	1	1	...	"	...
Butter ...	23	23	...	"	...
Milk ...	42	42	...	"	...
Cream ...	4	3	1	Excess of .15% Boric Acid	Vendor proceeded against, and fined £1 1s. 0d. and costs
Salad Oil...	4	4	...	Genuine	...
Glauber Salts	5	5	...	"	..
Epsom Salts	5	5	...	"	...
Bi-Car- bonate of Soda	5	5	...	"	...
Tartaric Acid	5	5	...	"	...
Cream of Tartar	5	5	...	"	...

The following tables give the number of animals killed during the years stated:—

PUBLIC ABATTOIR.

Year.	Beasts.	Sheep and Lambs.	Calves.	Pigs.	Total.
1917	4,166	15,609	248	3,334	23,357
1918	3,257	53,357	235	1,894	58,743
1919	3,054	57,835	815	2,451	64,205
1920	2,930	35,862	828	2,462	42,082
1921	3,135	15,566	545	3,625	22,871

MIDLAND RAILWAY SLAUGHTER-HOUSE.

10th Nov. to 31st Dec., 1920	...	1,305	...	...	1,305
Jan. to Dec. 1921	...	31,301	...	...	31,301

N.E.R. SLAUGHTER-HOUSE.

6th Nov. to 31st Dec., 1920	...	3,876	...	...	3,876
Jan. to Dec. 1921	...	43,366	...	...	43,366

REFUSE REMOVAL.

Number of Loads of House Refuse removed to Tips	16,301
,, Loads of Slaughter-house Garbage ...	314

DISINFECTION.

Number of Cases of Infectious Diseases Investigated	155
,, Cases of Infectious Disease removed to Hospital	114
,, Mattresses and Beds Disinfected	142
,, Bolsters and Pillows	306
,, Blankets	207
,, Quilts	140
,, Carpets and Rugs	29
,, Miscellaneous Articles...	309
,, Sheets	60
,, Houses Disinfected	161

FACTORIES, WORKSHOPS, WORKPLACES, AND HOMEWORK.

1.—Inspection of Factories, Workshops, & Workplaces.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
FACTORIES (Including Factory Laundries)	87	...	Nil
WORKSHOPS (Including Workshop Laundries)	598	23	Nil
WORKPLACES (Other than Outworkers' premises included in Part 3 of this Report)			
TOTAL	685	23	...

3.—Home Work.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.					
	Lists received from Employers.					
	Sending twice in the year.			Sending once in the year.		
	Lists.	Outworkers.		Lists.	Outworkers.	
		Con- tractors.	Work- men.		Con- tractors.	Work- men.
Wearing apparel— Making, &c. ...	4	...	...	1	...	..
Cleaning and Washing ...	...	...	...	...	...	..
Total ...	4	...	...	1	...	...

2.—Defects found in Factories, Workshops, and Workplaces.

Particulars.	Number of Defects.			Number of Pro-secutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—</i>				
Want of cleanliness	13	13	...	...
Want of ventilation	2	2	...	...
Overcrowding... ..	...	...	...	...
Want of drainage of floors ...	...	...	...	...
Other nuisances	4	4	...	...
Sanitary accommodation :—				
{ Insufficient	1	...	...	...
{ Unsuitable or defective	3	3	...	...
{ Not separate for sexes	...	...	...	...
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of under-ground bakehouse (s. 101)...	...	...	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100) ... ..	...	...	...	...
Other offences (Excluding offences relating to outwork, which are included in Part 3 of this report)	...	...	...	...
Total	23	22	None	None

4.—Registered Workshops.

Workshops on the Register (s. 131) at the end of the year		Number.
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Workshops	151
	Domestic Workshops ...	79
	Bakehouses	62
	Total number of workshops on Register ...	292

5.—Other Matters.

Class.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Acts (s. 133, 1901) ... ..	...
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory & Workshop Acts (s. 5, 1901) :	
Notified by H.M. Inspector	10
Reports (of action taken) sent to H.M. Inspector	9
Other ... ..	...
Underground Bakehouses (s. 101):—	
In use at the end of the year	3

6.—Classified List of Workshops.

Business.	No.	Business.	No.
Millinery .. .	24	Hand-weavers	1
Tailoring	31	Fishing Tackle .. .	2
Sugar Boiling	4	Stocking Knitting... ..	1
Cycle Repairing	12	Scale Repairers	2
Dressmaking	37	Picture Framing	1
Bakehouses	62	Photography	8
Boot Repairing	30	Tripe Dressing	2
Smiths' Works	4	Chocolate Making	1
Saddlery	7	Waste Paper Sorting	1
Meat Preparation	18	Marine Dealer	4
Watch Makers, &c.	15	Gut Scraper	1
Upholstering .. .	6	Fellmonger	1
Cloggers	9	Tanner	1
Coopers	2	Rudd Maker	1
Basket Making	3		
Umbrella Repairing	1	Total	292

SUMMARY OF SANITARY WORK PERFORMED IN CONNECTION WITH INSPECTION OF DISTRICT.

Nature of Inspections.	Number of visits paid.
HOUSES—	
Houses inspected in accordance with the Housing (Inspection of District) Regulations, 1910	320
Houses inspected under the Public Health Act, 1875	587
Houses re-inspected " "	250
" " on complaint	252
" " special inquiry	333
Visits <i>re</i> Infectious Diseases	331
Drains Inspected	715
Common Lodging-houses inspected	18
Inspections <i>re</i> Nuisances from Fowls & Animals	172
Common Yards, Courts, & Alleys inspected ...	7103
Schools inspected	6
Temporary or movable dwellings inspected ...	153
Public Halls	27
Visits to Applicants for New Houses ...	282
TRADE PREMISES—	
Bakehouses	158
Laundries	14
Stables	158
Cowsheds }	190
Milkshops }	
Ice-Cream Shops	93
Fried Fish Shops	160
Slaughter-houses	328
Markets	199
Factories	87
Workshops and Workplaces	598
Chimneys observed (smoke nuisances) ...	8
Visits after serving notices to supervise works in progress	437
Refuse Tips	151
Shops Act Inspections	231
Water samples taken for analysis	15
Miscellaneous inspections	585
Rats and Mice Destruction Order	201
No. of Posters <i>re</i> danger from house flies ...	250
<hr/>	
Notices served to abate Nuisances	358
" complied with	332
" not complied with	26

REMEDIAL WORKS DONE BY NOTICE.

Overcrowding Abated	...	...	...	...	13
Walls, Damp and Defective, Remedied	...	...	...	...	12
Roofs, Guttering, &c., Repaired	...	...	...	...	82
Yards Paved and Repaired	...	...	...	...	8
Abatement of Nuisances caused by Animals and Birds	...	...	...	...	70
Water-closets Repaired	...	...	...	...	46
Flushing Apparatus Repaired	...	...	...	...	16
Drains Unstopped	...	...	...	...	32
Drains Reconstructed and Repaired	...	...	...	...	39
Drains Tested	...	...	...	...	46
Accumulations of Manure Removed	...	...	...	...	19
Workshops Cleansed or Limewashed	...	...	...	...	16
Bakehouses Cleansed or Limewashed	...	...	...	...	6
Sinks Provided	...	...	...	...	1
Sink Waste Pipes Repaired	...	...	...	...	3
Mill Race Cleansed	...	...	...	...	2
Windows Made to Open	...	...	...	...	11
Washhouses Repaired	...	...	...	...	4

I have the honour to be,

Your obedient Servant,

C. W. HILL.

